CHINA.

IMPERIAL MARITIME CUSTOMS.

II.—SPECIAL SERIES: No. 2.

MEDICAL REPORTS,

FOR THE HALF-YEAR ENDED 31ST MARCH 1882.

23rd Issue.

PUBLISHED BY ORDER OF

The Inspector General of Customs.

International Health Exhibition.

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No. 59

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SHANGHAI:
STATISTICAL DEPARTMENT
OF THE
INSPECTORATE GENERAL.

MDCCCLXXXII.

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INSPECTOR GENERAL'S CIRCULAR No. 19 OF 1870.

INSPECTORATE GENERAL OF CUSTOMS,
PEKING, 31*st December* 1870.

SIR,

1.—IT has been suggested to me that it would be well to take advantage of the circumstances in which the Customs Establishment is placed, to procure information with regard to disease amongst foreigners and natives in China; and I have, in consequence, come to the resolution of publishing half-yearly in collected form all that may be obtainable. If carried out to the extent hoped for, the scheme may prove highly useful to the medical profession both in China and at home, and to the public generally. I therefore look with confidence to the co-operation of the Customs Medical Officer at your port, and rely on his assisting me in this matter by framing a half-yearly report containing the result of his observations at.....upon the local peculiarities of disease, and upon diseases rarely or never encountered out of China. The facts brought forward and the opinions expressed will be arranged and published either with or without the name of the physician responsible for them, just as he may desire.

2.—The suggestions of the Customs Medical Officers at the various ports as to the points which it would be well to have especially elucidated, will be of great value in the framing of a form which will save trouble to those members of the Medical profession, whether connected with the Customs or not, who will join in carrying out the plan proposed. Meanwhile I would particularly invite attention to—

a.—The general health of.....during the period reported on; the death rate amongst foreigners; and, as far as possible, a classification of the causes of death.

b.—Diseases prevalent at.....

c.—General type of disease; peculiarities and complications encountered; special treatment demanded.

d.—Relation of disease to { Season. / Alteration in local conditions—such as drainage, &c. / Alteration in climatic conditions. }

e.—Peculiar diseases; especially leprosy.

f.—Epidemics { Absence or presence. / Causes. / Course and treatment. / Fatality. }

Other points, of a general or special kind, will naturally suggest themselves to medical men; what I have above called attention to will serve to fix the general scope of the undertaking. I have committed to Dr. ALEX. JAMIESON, of Shanghai, the charge of arranging the Reports for publication, so that they may be made available in a convenient form.

3.—Considering the number of places at which the Customs Inspectorate has established offices, the thousands of miles north and south and east and west over which these offices are scattered, the varieties of climate, and the peculiar conditions to which, under such different circumstances, life and health are subjected, I believe the Inspectorate, aided by its Medical Officers, can do good service in the general interest in the direction indicated; and, as already stated, I rely with confidence on the support and assistance of the Medical Officer at each port in the furtherance and perfecting of this scheme. You will hand a copy of this Circular to Dr. ....., and request him, in my name, to hand to you in future, for transmission to myself, half-yearly Reports of the kind required, for the half-years ending 31st March and 30th September—that is, for the Winter and Summer seasons.

4.— * * * * *

I am, &c.,

(signed) ROBERT HART,
I. G.

THE COMMISSIONERS OF CUSTOMS,—*Newchwang*, *Tientsin*, *Chefoo*, *Hankow*, *Kiukiang*, *Chinkiang*, *Shanghai*, *Ningpo*, *Foochow*, *Tamsui*, *Takow*, *Amoy*, *Swatow*, and *Canton*.

SHANGHAI, *1st September 1882.*

SIR,

IN accordance with the directions of your Despatch No. 6 *A* (Returns Series) of the 24th June 1871, I now forward to the Statistical Department of the Inspectorate General of Customs, the following documents:—

A special article on Filaria Disease, pp. 1–16.

Report on the Health of Amoy, p. 17;

Report on the Health of Hoihow, pp. 30–32;

Report on the Health of Foochow, pp. 35–37;

Report on the Health of Shanghai, pp. 41–43; each of these referring to the half-year ended 31st March 1882.

Report on the Health of Canton for the eight months ended 31st March 1882, pp. 33, 34.

Report on the Health of Takow and Taiwan-fu (Anping), pp. 18–29;

Report on the Health of Kiukiang, pp. 38–40; each of these referring to the year ended 31st March 1882.

I have the honour to be,

SIR,

Your obedient Servant,

R. ALEX. JAMIESON.

THE INSPECTOR GENERAL OF CUSTOMS,
PEKING.

The Contributors to this Volume are:—

P. MANSON, M.D., CH.M. ..... Amoy.

W. W. MYERS, M.B., CH.M. ..... Takow and Taiwan-fu.

E. A. ALDRIDGE, L.K.&Q.C.P.I. ..... Hoihow.

F. CARROW, M.D. ..... Canton.

J. A. STEWART, M.D. ..... Foochow.

G. R. UNDERWOOD, M.B., CH.M. ..... Kiukiang.

R. A. JAMIESON, M.A., M.D., M.R.C.S. ..... Shanghai.

NOTES ON FILARIA DISEASE.*

By Patrick Manson, M.D.

Since my last Report on the subject of filaria disease was written, I have availed myself of opportunities as they have presented themselves from time to time to extend previous observations, and to elaborate or confirm what others or myself have already recorded. The results of most of this work I have brought together in the following notes. As my object has been merely to fill in gaps in our knowledge, and not to attempt a complete history, I have avoided, as much as possible, repetition of what has already appeared in these Reports or elsewhere. Thus my notes may seem disconnected and be unintelligible to the reader who is not already acquainted with what has been done. Such an one I would refer for fuller information to the writings of Lewis, Cobbold, and others, and to former numbers of the *Medical Reports*. Many of the observations are published now for the first time; others, again, have appeared in a different form in various home journals. I thought it advisable, however, as I may not have an opportunity for some time of continuing this work, to give others the benefit of what I have stumbled on, and to bring, incomplete though many of the observations may be, these Reports, as far as my own work is concerned, up to date. The subject is a new and an expanding one, and therefore fresh information, no matter how crude and imperfect, may prove useful and suggestive.

Filarial Periodicity.

In a former issue of these Reports † I pointed out that singular phenomenon in the history of filaria sanguinis hominis which has come to receive the name of *filarial periodicity*. I therein gave part of the evidence on which my assertion of the existence of such a phenomenon was founded; and I ventured to make some suggestions as to its meaning in relation to the life-history of the parasite, and as to what becomes of the animal during its temporary absence from the general circulation. Although the evidence was somewhat fragmentary, yet, taken in connexion with a multitude of unsystematic and unrecorded observations, it appeared quite conclusive, at least to my mind. However, in order further to elucidate the subject, and render the evidence still more complete, I determined to avail myself of the first suitable opportunity to prosecute systematic observations extending over a period much longer than that of any of the cases recorded in my previous Report; and, seeing that the periodicity is one of 24 hours, I thought it possible that it might in some way be influenced, or even caused, by the more or less regular diurnal fluctuations in meteorological conditions dependent on the daily revolution of the earth; or, possibly, that the normal daily rise and fall of body temperature, or other quotidian physiological phenomenon, might have some association with it. I determined, therefore, to add to my observation on the ingress and egress

* *See* Customs *Medical Reports*, xiii, 30; xiv, 1; xviii, 31; xx, 13. † *Ibid.*, xviii, 36.

of the embryo parasites others on the temperature and pressure of the atmosphere, the temperature of the body, and the rapidity of the circulation, as indicated by the state of the pulse.

I was able during the summer of 1880 to enlist the services of two sufficiently intelligent lads, in every way well suited for my purpose. I trained them to examine the blood, to count the embryo parasites they found therein, to read the thermometers and barometer, and to record all their observations accurately. As they themselves were filarious, and the subject of their own observations, the work could be prosecuted easily, with little fear of interruption, and with the sympathies of the observers entirely on the side of accuracy and truth. Their work I constantly superintended and checked. If error has crept into the chart* into which I have condensed their observations, I am certain it is of a trifling and unimportant character, such as is necessarily inseparable from work of the kind; taken as a whole, it may be thoroughly relied on.

Both lads came from Hooihoah, a highly filarious district, about three days' journey to the north of Amoy. Li Kha (I. in the chart) was 21 years of age, of average size, and in good general health. He gave no history of fever, lymphangeitis, or of any serious disease whatever, and his body appeared to be free from blemish that might be associated with the presence of filariæ. Tiong Seng (II. in the chart), on the contrary, gave a history that distinctly pointed to filarial infection. He, too, was 21 years of age and in good general condition, but he stated that for six or seven years he had been subject to attacks of what he called ague (lymphatic fever), and that these attacks recurred about once a month. They began, he said, with a feeling of giddiness, and painful aching weariness in the body and limbs. This gradually merged into a cold stage of two or three hours' duration, which was succeeded by a hot stage of very high fever, lasting for 24 hours, terminating in a moderate diaphoresis, continuing for an hour or two. The fever was accompanied by complete anorexia, and during its continuance the inguinal and femoral glands invariably became swollen and excessively painful, those on the right side being more affected than those on the left. With the exception of these attacks and an orchitis which developed while under observation, and to be presently alluded to, he never had any trouble about the limbs or genitals, nor other symptom of filarial disease.

The observations by and on these two men I condensed and arranged in the chart previously published. In explanation of it I may mention that the first three compartments, counting from above downwards, refer to Li Kha (I.), the second three to Tiong Seng (II.), and that the two lowest are occupied by readings of the barometer and ordinary thermometer. At the left hand margin are numbers referring to the filariæ found in a droplet of blood obtained by pricking the finger, and sufficient to occupy in a thin transparent film a slide measuring $1'' \times 1\frac{1}{2}''$; also the degrees of temperature of the body, beats of the pulse per minute, temperature of the atmosphere, and barometric pressure. Along the top the figures refer to the date and hour of the day at which the examinations were made.

This chart, recording as it does a long series of systematic and carefully made observations, establishes thoroughly my first assertions about filarial periodicity. A glance at it shows with what regularity every evening the embryos enter the general circulation, how they increase in number up to midnight, and how, as morning approaches, they gradually diminish until

* This chart was published in Customs *Medical Reports*, xxii, 64.

they completely disappear. Rarely can one be found from 9 A.M. until 6 P.M., at least under ordinary circumstances. Since these observations were made I have had the satisfaction of seeing them confirmed by several observers, notably by Dr. MYERS in Formosa,* and by Dr. STEPHEN MACKENZIE in London.† Drs. RENNIE and ADAMS of Foochow, I understand, can also confirm my statements, and I doubt not that by this time filarial periodicity has been amply demonstrated by other observers in the different countries in which the parasite is endemic.

It is a remarkable phenomenon, and now that its existence is so well established I would commend it to the physiologist as a possible aid to the explanation of such rhythmical phenomena as sleep, the evening rise of body temperature, etc.; to the pathologist as a possible aid towards the explanation of diurnal intermission and remission in fevers, especially of the ague class. Whether it may or may not be of service in either of these directions it is impossible as yet to say. But though it may lead to nothing in this way, yet the thing itself is so curious and of so striking a character that the mind naturally desires more information about it, and, if possible, an explanation of its object and of its cause.

I have already pointed out‡ that filarial periodicity is an adaptation of the habits of the filaria to those of the mosquito, the intermediary host indispensable to the future life of the parasite. This is the object of the arrangement, but the particular force or mechanism that operates on the embryo parasite, causing it to appear in the blood normally only at certain hours,—this, the cause of filarial periodicity, has yet to be ascertained. Certain facts, however, have recently been discovered that tend to confine the search to a comparatively limited field.

From the fact that the periodicity is one of 24 hours, we are justified in inferring that its remote cause is the diurnal revolution of the earth. As affecting the parasite in the human body, this may operate in one of two ways: 1st, by means of some of the daily and rhythmical variations it produces in meteorological forces—one or other of these being the direct determining influence that liberates or restrains the parasite; or, 2nd, by inducing in the host of the parasite certain quotidian and rhythmical habits on which, directly or indirectly, the movements of the hæmatozoon depend,—such as the habits of waking and sleeping, exercise, the evening rise of body temperature, the times of feeding, etc. With regard to the first of these, there are at least four principal meteorological phenomena which have a more or less quotidian and rhythmical character, and which one might conceive had an influence in some way on the parasite. These phenomena are—the rise of atmospheric temperature during the day and fall during the night; the decrease of atmospheric pressure during the afternoon; the coming and going of the light; and the diurnal variations in the electrical condition of the earth, as indicated by the magnetic needle. But if we inquire into the behaviour of any of these, we shall find that no one of them is so absolutely true in its rhythm as is filarial periodicity. There are frequent exceptions to the general rules that the day is warmer than the night, and that barometric pressure falls during the afternoon. If either of these things, therefore, had anything to do with filarial periodicity, then we should expect to find the latter in entire sympathy with one or other of them, and exhibiting corresponding variations. But if the chart in which these are carefully noted is consulted, it can be seen at a glance

* Customs *Medical Reports*, xxi, 7.

† *Lancet*, 1881, ii, 398, 707.

‡ Customs *Medical Reports*, xviii, 39.

how far this is from being the case. The presumption is, therefore, that filarial periodicity is independent of atmospheric pressure and temperature.

To ascertain if the waxing and waning of the light had any influence, I had a filarious subject, in whom I had previously ascertained that periodicity was normal, shut up for several days in a dark room, into which it was impossible for a single ray of sunlight to penetrate. During four days, as far as sunlight was concerned, he was always in the dark, and it was only after sunset that he left his room. A glance at the following table shows that the result of this experiment was entirely negative. I may remark that I was careful not to interfere with his usual habits, and therefore did not disturb him during the night to examine his blood. It was sufficient for my purpose to ascertain approximately the hours of ingress and egress of the embryos, and their conduct during the day.

TABLE showing the NUMBER of EMBRYO FILARIÆ, at the HOURS and DATES indicated, in a SLIDE of BLOOD 1″ × 1½″, the SUBJECT of OBSERVATION being kept in a DARK ROOM during the Four Days, 26th, 27th, 28th, and 29th November.

HOUR.	Nov. 24.	Nov. 25.	Nov. 26.*	Nov. 27.*	Nov. 28.*	Nov. 29.*	Nov. 30.	Nov. 31.	Dec. 1.	Dec. 2.
7 A.M.	1	4	13	39	25	19	17	16	12	14
11 „	0	0	1	0	1	0	1	0	0	0
4 P.M.	0	0	1	0	2	0	3	1	2	0
7 „	5	0	0	0	1	0	5	1	4	0
9 „	10	8	5	18	10	7	17	18	27	16

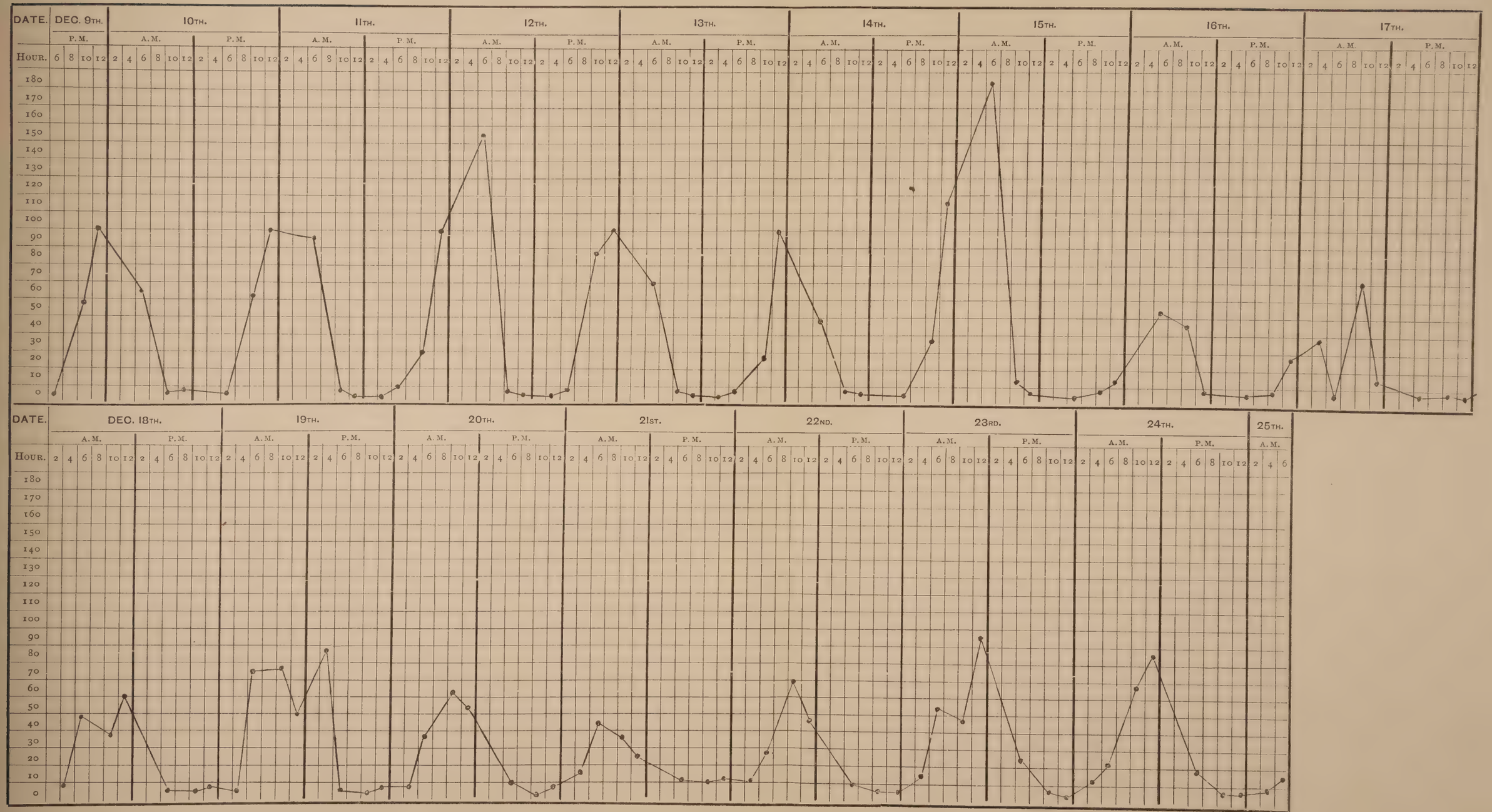
Thus, of the meteorological influences which might be supposed to have an influence on filarial periodicity, three are eliminated. It has been shown that neither temperature, atmospheric pressure, nor light has anything to do with it. There remains only terrestrial magnetism; but although the rhythm of its variations corresponds very closely with that of filarial periodicity, the progress of discovery within the last few months has rendered a connexion between the two so extremely improbable that I have not considered it worth while to pursue investigation in this direction any longer. It has been pretty conclusively demonstrated that the immediate cause of filarial periodicity is dependent, not on meteorological conditions resulting from the daily revolution of the earth, but on the *habits* this great fact impresses on the human body.

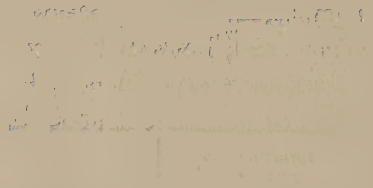
In the *Lancet* of 27th August 1881 there appeared a letter from Dr. STEPHEN MACKENZIE, in which he announced that a case of chyluria of Indian origin had turned up at the London Hospital, and that the filaria sanguinis hominis could be found in abundance in the patient's blood; and, further, that the same periodicity was observed by the parasites in London as had been described as occurring in China. At the meeting of the Pathological Society on the 18th October, Dr. MACKENZIE exhibited this patient and demonstrated the parasites in his blood, and he also described how he had been able to break up, and even invert periodicity, by simply changing the habits of the patient with regard to the times of sleeping and waking.

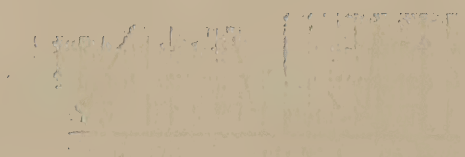
* In dark room.

CHART I.

Representing the Effects of Day Sleeping and Night Watching in inverting Filarial Periodicity.







If the patient slept during the day and kept awake during the night, periodicity was inverted. This was a new and important fact. It seemed to be another step towards the explanation of a curious phenomenon, and, impressed by its importance, I took an early opportunity to repeat and vary Dr. MACKENZIE'S experiments.

The history of the first patient on whom I experimented is briefly as follows:—

Case 58. *Filariæ in the Blood; Enlarged Spleen; Anæmia: Experiment on Inversion of Filarial Periodicity.*—TIN, male, æt. 25; Tsongkhæ, Tchangtchiu; a field labourer. When 12 or 13 years old, he says he had an abscess in his lungs, which burst, the contents escaping by his mouth. He spat over a bowlful of blood and pus at the outset, and continued afterwards for about four months to cough up similar stuff. He says the matter expectorated was thick, viscid, and could be drawn out in a long string; the discharge of this was difficult, attended with much cough; says he recollects this very well, as his mother used to slap his back to encourage expectoration. Now he has no trouble about his lungs beyond a slight cough when he catches cold. At 15 or 16, had for four months an eczema on both legs, and at 17 a very large abscess in the right popliteal space. Since boyhood has been subject every autumn to aguish attacks of a very irregular character, lasting off and on for about a month every year. Often during these attacks the inguinal glands, sometimes on the right side, sometimes on the left side, inflame, but neither pain nor swelling is ever considerable. Occasionally his right testicle enlarges without inflammation. These attacks of fever consist of about one hour of rigor, followed by three hours of heat and one hour of sweating; often they are distinctly tertian, and I think they are genuine ague. The swelling of the glands does not always accompany the fever, but the lymphangeitis is usually associated with fever.

He states that some years ago I removed big scrota from two men living in his village, but he does not know of any well-marked case of elephantiasis of the leg among his neighbours. When young, he often drank cold water, but since he became sick he never touches it.

He is very thin, anæmic and debilitated. An enlarged spleen extends beyond the border of the ribs. He has no decided enlargement of glands, scrotum or legs; nor does he give any history of chyluria.

This year his ague began about two months ago. It was tertian in type, and continued on him in a subdued form for about a month. He came to hospital to be treated for his debility, enlarged spleen and dyspepsia. He took quinine and BLAND'S pills for a fortnight, and when his health had improved considerably I got his consent to experiment on his blood parasites.

From the 9th to the 26th December 1881, observations were regularly made on this man, the usual quantity of blood (1″ × 1½″ cover glass) being examined each time. During the first five days sleep was indulged in at the usual hours. Periodicity having been found normal, the time of sleep was changed to the day, and of waking to the night. On the 14th December he was not allowed to sleep as usual, but was kept awake till 6 in the morning of the 15th—that is, for 24 hours. He was then allowed to sleep till afternoon; and from this time sleep was always indulged in during the day, while at night he was kept awake. Simultaneously with observations on the number of filariæ present in a given quantity of blood, observations on the body temperature were made, in order to avoid the complicating effect of fever should this occur; but as the temperature kept normal all the time, I have not considered it necessary to introduce its record into the chart (I., facing this page,) on which I have condensed my observations. In explanation, I may mention that the figures at the side refer to the number of filariæ in a slide of blood 1″ × 1½″, while the figures along the top refer to the date and hour of examination. For the first five days the sleeping hours were

from 6 P.M. to 6 A.M. On the subsequent days—that is, from the 15th to the 24th December—they were from 5 A.M. to 5 P.M. During the period when the patient slept at night I did not consider it necessary to wake him at midnight to sample his blood, so in the chart I have assumed that at this hour on these days the filariæ numbered 100. With this exception, only carefully observed facts are recorded.

It is evident from this chart that Dr. MACKENZIE'S case was not exceptional; it confirms his statement as to the connexion of the sleeping and waking states with filarial periodicity. Something bound up with these states has clearly a powerful influence on the parasite or its young. But, as Dr. MORTIMER GRANVILLE points out,* it is not simply sleep or waking that has this influence. It is something recurring every 24 hours, just as the habits of sleeping and waking recur, and which is capable of being inverted just as these habits are, and by the same means. That sleep does not cause the ingress of embryos is evident from the circumstance that ingress commences hours before the usual time for sleeping, and egress begins hours before the usual time of waking, and periodicity is maintained even though no sleep be indulged in for two or three days, or if sleep is continuous, or nearly so, for as long a time (*see* Charts II. and III.). The facts of the case seem to indicate that the conditions favourable to the ingress of the parasites become developed ordinarily during the last few hours of the waking state, and that they are slowly eliminated during the last few hours of sleep.

Being anxious to vary Dr. MACKENZIE'S experiment, and, if possible, obtain additional facts that might aid in answering the question of the cause of filarial periodicity, I placed two other men under observation, and variously altered and modified their hours of sleeping, waking and eating. Unfortunately, the man TIN, who was the subject of the observations recorded in Chart I., had had enough of it, and seemed very reluctant to submit to a second course of experiment. I was therefore obliged to fall back on the two other men, whose stock of filariæ was rather too limited to show distinctly delicacies of fluctuation. I give the results for what they are worth. Charts II. and III. are arranged on the same plan as Chart I. The letter "F" is introduced at the hours when food was taken.

In the case of TIEK PO (Chart II.), the patient slept from 9 P.M. on the 30th December to 6 A.M. on the 31st. From 9 P.M. on the 31st December to 6 A.M. on the 3rd January, and from 3 P.M. on that day to 3 P.M. on the 5th, sleep was prolonged by repeated doses of chloral, the patient being waked up to take food at the usual hours. From the 5th to the 8th January the sleeping hours were from 9 P.M. to 6 A.M. Thence until the 20th, sleep was allowed each day from 8 A.M. to noon, and from 8 P.M. to midnight. On the 20th–21st the patient slept from 8 P.M. to 6 A.M., and on the subsequent nights from 9 P.M. to 6 A.M.

In the case of IN (Chart III.), sleep was permitted from 9 P.M. on the 30th December to 6 A.M. on the 31st. The waking state was enforced from this latter hour until 9 P.M. on the 2nd January. Thence to the 18th January sleep was enjoyed nightly from 9 P.M. to 6 A.M., and from 9 P.M. on the 18th to noon on the 19th.

The history of the men is briefly as follows:—

Case 59. TIEK PO (Chart II.), male, æt. 25; Tchauoi, Tchiupo; farmer. He lives in a village of about 150 inhabitants, and among these are several cases of elephantiasis. Has been ailing for four or five years with ague of tertian type. Off and on has had attacks every winter with the advent of the

* *Lancet*, 1882, i, 314.

CHART II.

Representing the Effects of Day Sleeping and Night Watching in inverting Filarial Periodicity.

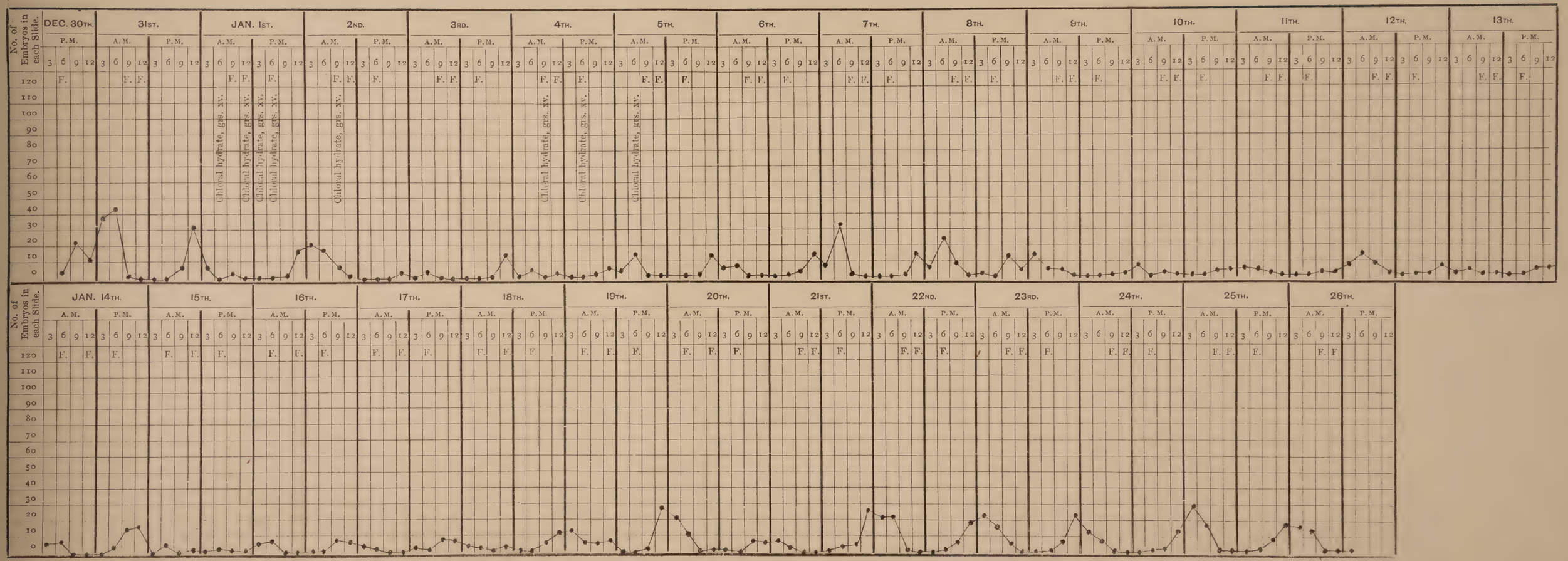
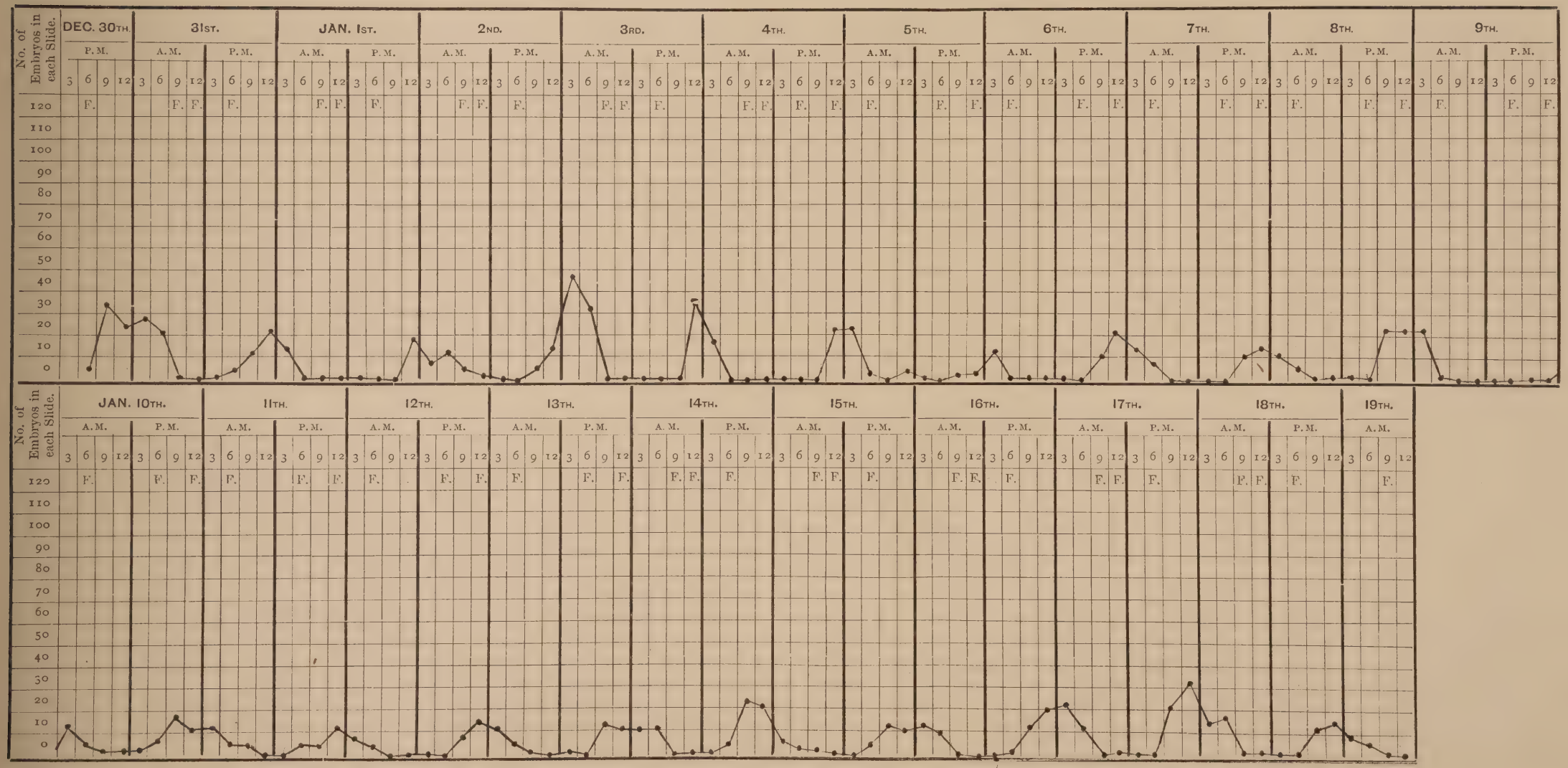
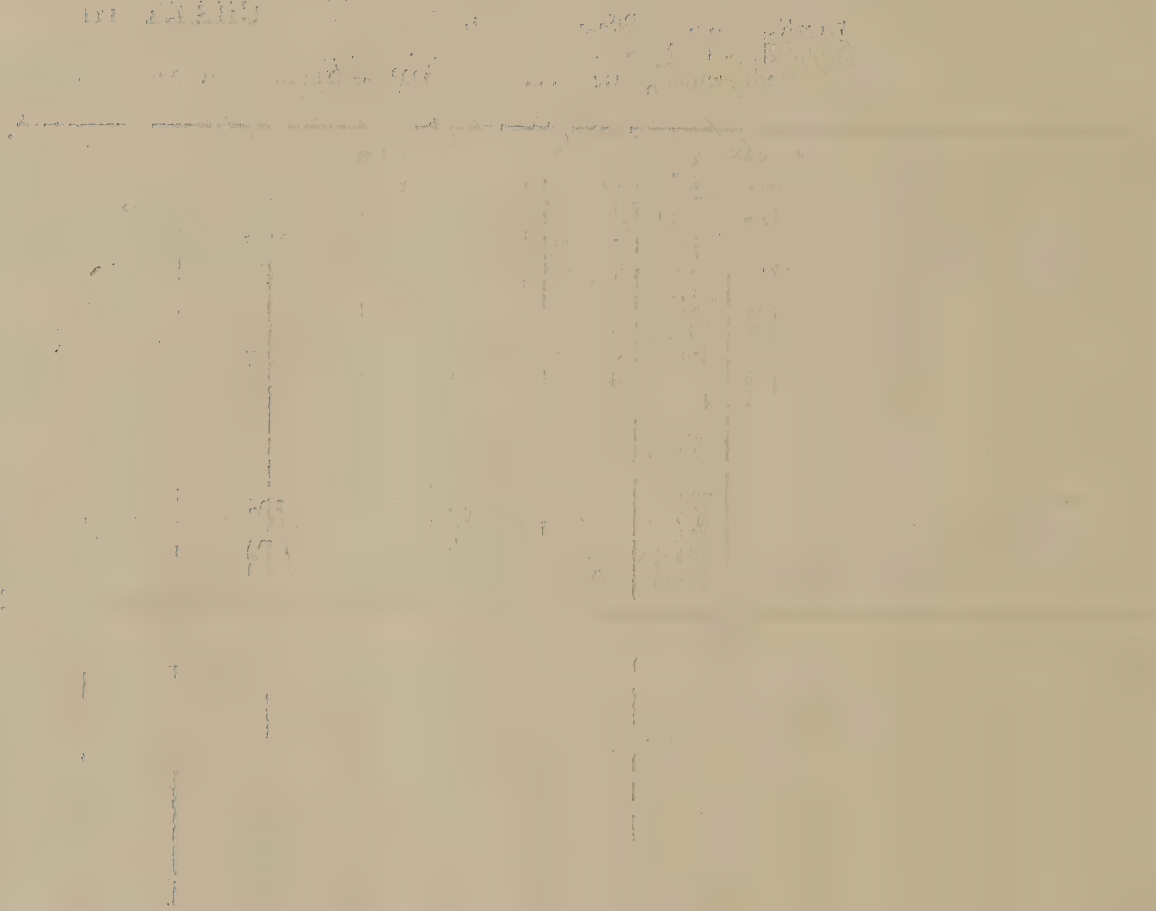


CHART III.

Representing the Effects of Day Sleeping and Night Watching in inverting Filarial Periodicity.





cold weather. His spleen has been enlarged for several years, and since a year ago he has been subject to attacks of pain and swelling in the left testicle and cord.

On examination his spleen is found to extend to the umbilicus, but no swelling of cord, testicles, scrotum, glands nor legs can be made out; nor is there any history of chyluria or lymphatic fever. Two months ago he had a single fit of fever, and is now very anæmic.

During the time he was under observation he was given quinine and iron in full doses.

Case 60. In (Chart III.), male, æt. 47; Danmng, Tchiupo; farmer. In his village of 200 inhabitants are several cases of elephantiasis of leg or scrotum. One of the latter was operated on at the hospital some time ago. Since boyhood has been subject nearly every year to lymphatic fever of three or four days' duration, associated with swelling of the testicles and scrotum. He has also had attacks of tertian ague and swollen spleen; but at present, both spleen and scrotum are normal to all appearance, although the groin glands are rather large and firm. He says that during his fever attacks these glands swell to the size of fowls' eggs. Had, on admission, right facial paralysis of 40 days' standing; this supervened during an attack of fever and delirium. Has never had chyluria nor distinct sign of elephantiasis. His reason for coming to hospital was to be cured of a long-standing chronic ulcer on the left leg. He, too, while under observation, took full doses of iron and quinine.

From these charts we may gather that filarial periodicity is maintained during prolonged watching, and also when the hours of eating are changed, so that the middle meal is taken at midnight, and not, as usual, at mid-day; also, that prolonged sleep possibly disturbs periodicity and diminishes the number of parasites circulating at the time of maximum; and, that when the usual allowance of eight hours' sleep is taken in spells of four hours at a time, at intervals of eight hours, periodicity is disturbed, and the numbers circulating at the time of maximum are sensibly diminished.

When experiments and facts have been multiplied, we may be able to say precisely what is the cause of filarial periodicity. At present, facts are wanting. One which seems to me to have some importance I have not yet alluded to. If reference be made to the chart at p. 64 of vol. xxii, it will be seen that the man Tiong Seng was, shortly after observation commenced, attacked with fever. The fever was consequent on orchitis and lymphangeitis, undoubtedly of filarious origin. It will be seen that the body heat was very high a considerable time before periodicity was affected, and that the usual rhythm of the ingress and egress of the parasites was not renewed for some days after the temperature had fallen to normal. It would seem that the febrile condition slowly developed in the blood, or elsewhere, some constituent or condition whose presence or amount influenced the parasites, and that it was not until this pathological product or condition was eliminated or altered that periodicity of a normal character was resumed. May not the waking state, which seems so favourable to the ingress of the parasites, be associated with the development of some physiological condition or product analogous to, or the same as, that resulting in pathological quantity from fever, and the presence of which leads to the presence of the embryo parasites in the blood?

Dr. Mackenzie's discovery has done something to advance this interesting inquiry. He has limited the field in which search need be made. Nevertheless, much has yet to be done, more facts to be collected, before the answer can be given. It seems to me that this will have to be supplied by the physiologist; and when the answer has been supplied, we shall be in possession of an explanation of many phenomena more important, though not more curious, than filarial periodicity.

Fate of the Embryo Parasites not removed from the Blood.

Another point on which I have a few remarks and facts to offer has recently been discussed by Dr. Myers in a valuable paper in the 21st volume of these Reports, viz., the fate of the embryo parasites which have not been directly removed from the blood by mosquitos or other means. Do they, after a brief life of a few hours, die, and have we to deal with a fresh swarm every 24 hours? Or do the parasites, after a temporary appearance in the general circulation, daily retire to some organ or set of vessels to await the recurrence of conditions such as I have been discussing, which induce them again to circulate? Dr. Myers alleges that when the blood is examined towards morning, when the numbers are diminishing, symptoms of languor are observable in many specimens, and if these languid individuals are watched for some days they are found to disintegrate more rapidly than other and more vigorous specimens obtained during the earlier part of the night. Dr. Myers's experiments I repeated many times, but failed to satisfy myself that what he describes applied to the parasites I observed. I have kept both morning and evening embryos alive on oiled slides for over 100 hours. In fact, so long as the serum of the blood remained fluid or viscid, so long did the parasites live. I do not think it reasonable to suppose that animalcules exhibiting such tenacity of life outside the body should so quickly die in it, seeing that the circulating blood is their natural habitat. But, even supposing that what Dr. Myers describes is to be found in every case, it does not by any means follow that this condition of languor is preliminary to disintegration; quite as probably it is preliminary to their passing into some state of rest. If they died daily in the blood, surely dead specimens would be frequently met with; yet so far is this from being the case that I do not recollect ever to have seen in freshly-drawn blood a dead filaria—at least, one whose death could not easily be accounted for by crushing under the cover glass. The facts Dr. Myers adduces are hardly sufficient to found an argument on. In a former paper * I quoted some experiments on the destiny of the embryos of filaria immitis of the dog. Their preponderating abundance in the lungs at certain times seemed to favour the supposition that they occasionally retired to the pulmonary circulation, and I suggested that something analogous might happen in the case of filaria sanguinis hominis. I quite agree with Dr. Myers that such evidence is not conclusive, but analogy must be allowed to have some weight in inquiries of this nature. I may mention here that blood aspirated from the enlarged spleens of two filarious patients during the day contained no filariæ; and that examination of a very small quantity of lung blood in a case of hæmoptysis, also in a filarious subject, yielded similarly negative results.

If we adopt Dr. Myers's views as to the fate of the embryos, we are driven to the conclusion that filarial periodicity depends on intermittent reproduction, and that a fresh swarm issues from the parent every 24 hours. It is possible to put this hypothesis to the test of experiment. In two cases I have had the opportunity of doing so.

I have already † published a case of lymph scrotum in which the parent filaria was found. Prior to operation lymph constantly dripped from ruptured lymphatics on the surface of the scrotum. As there was constant discharge, there was no accumulation. Therefore the

* Customs *Medical Reports*, xviii, 40.

† *Ibid.*, xx, 13.

lymph that escaped was a fair sample of what was passing the parent worm, and in which she was lying. The lymph was examined three times in one day, viz., at 11 A.M., 5 P.M., and 7 P.M. At each examination many embryos were found. It was evident that the parent was giving birth to them at a time when they are normally absent from the circulation, and that periodicity in this case was independent of the act of parturition. Did filarial periodicity depend on intermittent reproduction, then no embryos could have been found at 11 A.M., and if found at 5 P.M. they would have been present in the lymph only in very small numbers. I might have made a more extended and careful series of examinations in this case with a view to settle the point, but its importance did not occur to me at the time. Still, as far as they go, these few observations are significant.

Since Dr. MYERS informed me of his views, I have been on the outlook for a similar or equally suitable case, and some time ago succeeded in finding one which seems to me to settle the point.

Case 61. *Chyluria; Filariæ in the Blood and Urine: an Attempt to ascertain whether Filarial Periodicity be dependent on Quotidian and Intermitting Reproduction, or whether it be altogether independent of the act of Parturition.*—IP, male, æt. 24; born and residing in Hongsansia, a large village on the North River, about 8 *po* from Amoy; farmer. Never suffered from fever, nor, until lately, from any serious disease. Sometimes has dyspeptic pains in the belly, but nothing of a more serious character. For the past seven or eight years has been troubled with swelling of the left testicle after a hard day's work; the swelling is only slight, and is never accompanied by fever or inflammation.

The chyluria, on account of which he came to hospital, appeared about 60 days before the date of his admission. It began suddenly after a long, rough, midnight hunt after wild pig on the Hongsan Hills. On his return home he urinated clots, and since then he has constantly, with only one or two exceptions, passed chylous urine. Latterly, he says, the urine has become redder in colour; formerly it was more milky.

He has no elephantiasis nor disease of legs, scrotum or glands; the only thing amiss is slight swelling of the left testicle. Elephantiasis is not common in his village, but there are plenty of cases in the surrounding country. He often drinks cold water.

The urine on being passed is of a dark opaque salmon colour, and reddish clots swim in it. Examined with the microscope it is found to contain many active filariæ, and his blood, if searched after sunset, is seen to be similarly infested.

He complains of much debility and considerable loss of flesh and strength, but his appetite is as good as ever.

As in this case lymph or chyle was nearly always present in the urine, there could be no accumulation in the lymphatics. What at any given time might be selected for examination was a fair specimen of that passing the parent worm; and the presence or absence of embryos in this would be a reliable indication of her activity or repose as regards the act of parturition. It was therefore a case well suited to settle the question whether filarial reproduction was a more or less constant or an intermitting process.

The patient was given a placebo, and directed to pass urine into a clean vessel every three hours. The urine thus obtained was well stirred, so as to break up coagula as soon as they formed. An ounce of it was then drawn off into a smaller vessel, and allowed to stand for some hours until subsidence had occurred. A little of the sediment was then taken up with a pipette, one drop of this placed on a suitable slide, and the filariæ it contained carefully counted. Blood drawn at corresponding hours was also examined, and the number of embryos in a slide 1″ × 1½″ enumerated. The result of these examinations, extending over one week, I have projected in the accompanying table.

TABLE showing the NUMBER of EMBRYO FILARIÆ in a fixed Quantity of BLOOD and URINE, obtained at intervals of Three Hours, from a case of CHYLURIA.*

1881.		HOURS.							
		3 A.M.	6 A.M.	9 A.M.	12 M.	3 P.M.	6 P.M.	9 P.M.	12 MD. N.
August 13.....	Quantity of urine.....	...	...	...	12	½	10	8	12
	Filariæ in urine.....	...	...	...	4	1	10	2	0
	„ blood	...	...	...	0	0	0	4	1
„ 14.....	Quantity of urine.....	W 1½	1	5	5½	10	W 15	11	W 8
	Filariæ in urine.....	0	4	0	9	1	0	1	0
	„ blood	0	0	0	0	0	1	6	8
„ 15.....	Quantity of urine.....	W 4	2½	½	6	10	17	16½	6
	Filariæ in urine.....	2	3	8	17	2	0	11	0
	„ blood	2	0	0	0	0	0	12	14
„ 16.....	Quantity of urine.....	5½	W 2½	¼	17½	20	W 22	18½	13
	Filariæ in urine.....	1	0	2	6	3	0	2	1
	„ blood	3	0	0	0	0	0	17	11
„ 17.....	Quantity of urine.....	W 2½	W 2	1	6	18	15	6	5
	Filariæ in urine.....	1	0	2	6	6	2	11	2
	„ blood	2	0	0	0	0	0	9	7
„ 18.....	Quantity of urine.....	W 8	W 2	3	W 8	16½	11	18½	12
	Filariæ in urine.....	0	0	1	1	11	14	1	0
	„ blood	1	0	0	0	0	0	14	9
„ 19.....	Quantity of urine.....	3½	4½	1	...	...	...	...	...
	Filariæ in urine.....	0	0	23	...	...	...	...	...
	„ blood	2	0	0	...	...	...	...	...

If these figures are added together and arranged as follows, the results of this examination become more apparent. It seems to me that they indicate that filariæ embryos are nearly constantly passed into the lymph stream; and that whenever lymph finds its way into the urine, no matter at what hour, nor how long it has been running, it contains the parasite. Therefore, filarial periodicity is independent of the act of parturition, which is more or less a continuous process.

PRÉCIS of foregoing TABLE.

	HOURS.							
	3 A.M.	6 A.M.	9 A.M.	12 M.	3 P.M.	6 P.M.	9 P.M.	12 MD. N.
Total quantity of urine in ounces	25	14½	11	55	75	90	78½	56
„ filariæ in a slide of urine.....	4	7	36	43	24	26	28	3
„ „ „ blood.....	10	0	0	0	0	1	62	50
Average quantity of urine	$4\frac{1}{6}$	$2\frac{2}{6}$	$1\frac{5}{6}$	$9\frac{1}{6}$	$12\frac{3}{6}$	15	13	$9\frac{2}{6}$
„ filariæ in a slide of urine.....	$\frac{4}{6}$	$1\frac{1}{6}$	6	$7\frac{1}{6}$	4	$4\frac{2}{6}$	$4\frac{4}{6}$	$\frac{3}{6}$
„ „ „ blood.....	$1\frac{4}{6}$	0	0	0	0	$\frac{1}{6}$	$10\frac{2}{6}$	$8\frac{2}{6}$
Number of times urine watery.....	4	3	0	1	0	2	0	1

* W before the amount of urine indicates that it was watery and comparatively free from chyle or lymph. The quantity of urine is expressed in ounces.

Although not bearing specially on the subject under discussion, the history of the case after this series of observations was completed is of interest as showing how much mechanical influences have to do in setting up and maintaining elephantoid diseases.

The observations recorded in these tables were completed on the 19th of August. On the 20th I sent him to bed and confined him strictly to the recumbent position. Very shortly this had the effect of making the urine in most specimens perfectly limpid. By the end of a week it was permanently clear. He then went home. Six months afterwards I heard of him. He was then quite well, and said he had not passed chylous urine since he left the hospital.

The chyluria was caused in the first instance by the succussion of rough exercise rupturing a congested and dilated lymphatic in the urinary tract; rest, and the removal of lymph pressure, obtained by maintaining the recumbent position, allowed the rupture to heal. The chyluria was thus cured, at least, temporarily, and one element in the pathology of these diseases clearly indicated. Chyluria, lymph scrotum, elephantiasis, diseases caused by lymphatic congestion and varicosity, should be treated on exactly the same principles as diseases resulting from mechanical blood congestion or venous varicosity. The most important element in the treatment of both forms of congestion is the removal, as far as possible, of fluid pressure by rest and elevation of the affected part.

The intimate Pathology of Filaria Disease.

There is abundant evidence that filaria sanguinis hominis does not always, or even generally, give rise to disease. As a rule, parasite and host live together for years in perfect harmony. Nature has adapted the requirements of the former to the organisation of the latter. But the evidence is equally strong that at times this harmony is disturbed, and that the presence of the parasite entails grave disease to its host, and that this disease is sometimes in one organ, sometimes in another. These are circumstances which demand an explanation. Why should the parasite give rise to disease in one man and not in another; and why should one organ suffer in one subject, another organ in a second, another in a third, and so on?

The explanation I propose to supply. I have some diffidence in bringing it forward, for it is of so strange a character, and unlike anything in pathology, that I fear many will disbelieve my facts and ridicule my conclusions. Nevertheless, the facts are correct; and this being the case, I do not see how the conclusions I deduce from them can be avoided. Many years may elapse before my observations are confirmed, for hundreds of cases may have to be examined before one similar to those I will refer to is encountered; and even when this has been met with and described, I barely hope that, unless it is vouched for by some very eminent authority, it will carry conviction to all minds. The facts of parasiticism are as strange as they are important, and just in proportion to this is the difficulty in getting them believed.

Some time ago* I gave the particulars of a case of lymphatic œdema of the legs, associated with slight enlargement of the groin glands. I described how I punctured the glands with a hypodermic syringe, and how I found in lymph thus obtained not only the

* Customs *Medical Reports*, xviii, 49.

usual form of embryo filaria sanguinis hominis, as seen in the lymph and blood, but *ova* of the parasite containing active and perfect embryos. This for a long time remained an isolated and, by me, misinterpreted fact. To account for the presence of the ova I supposed that the parent filaria was normally oviparous, and some ambiguity in LEWIS'S description of the worm gave ground for this. But afterwards I had the good fortune to find two specimens of the mature worm for myself. An examination of these convinced me that they were certainly viviparous, and that my former hypothesis was therefore incorrect. How, then, seeing that the animal was not oviparous, was I to account for the presence of the ova in the case I refer to? I searched the gland lymph of dozens of cases, and also the lymph from many lymph scrota, and several cases of chyluria; but in vain. I could not meet with ova a second time. I began, therefore, to think, improbable though the supposition seemed, that the hypodermic needle I used to extract the lymph had wounded the uterus of the parent worm, and thus allowed the ova to escape. But in the spring of last year a second case turned up in which ova were found, and under circumstances in which it was impossible to suppose their presence was owing to injury of the parent. The following are my notes of the case:—

Case 62. *Lymph Scrotum; Filariæ in Lymph from Scrotum, also Ova containing coiled-up and active Embryos; small number of Parasites in the Blood: Operation.*—TUI, male, æt. 50; Tchangtchiu, Khioatan; a farmer. There are some 200 to 300 inhabitants in his village, including several cases of elephantiasis. One, called BENGA, I operated on some years ago, removing a 12-lb. scrotum.

When young, was careless about the water he drank, taking it indiscriminately from pool, well or river. When a little over 10 years of age, had frequent attacks of ague, both quotidian and tertian. His scrotal trouble began at 18. He had hydrocele then, and at times inflammation of the scrotum, and lymphous discharges. Two years ago, he says, I tapped his hydrocele. I forget the circumstance, and the character of the fluid withdrawn. As I did not inject iodine, doubtless at the time I considered the hydrocele to be of filarious origin, although he says the fluid removed was clear and straw-coloured. The hydrocele did not return, but the scrotum enlarged. He has attacks of fever and enlargement of the groin glands; and, irregularly, some three to ten times a month, the scrotum discharges a clear fluid, very like urine in appearance.

18th May 1881.—The scrotum is as large as a pumelo, and the penis is buried in it; the upper and anterior part is firm like a forming elephantiasis, while the lower and back part is covered with enormously dilated lymphatics, some of the ampullæ containing clear fluid being as large as the tip of a finger.

7 P.M.—Pricked a vesicle; profuse discharge of fluid, in which I found filariæ. A slide of blood from the finger drawn at 9 P.M. contained no parasites.

19th May, 6 A.M.—Slide of finger-blood examined; no filariæ. Lymph drawn last night again examined; it had coagulated but feebly; it again yielded filariæ. The feeble coagulum was now broken up by stirring. It rapidly disappeared, a small quantity of red deposit and some white cloudy flocculi subsiding. In this sediment were many embryos, and in nearly every slide *ova*, with active embryos struggling vigorously to stretch their chorional envelopes. No double outline could be detected in the embryos. The chorion could be distinctly made out, especially when the activity of movement had somewhat subsided.

20th May.—An assistant examined a large slide of blood drawn at 10 P.M. last night, and in it found one embryo; and again at 6 A.M. to-day, but then found none. I examined several slides of sediment from the lymph of the 18th, and found embryos still alive, many of them enclosed in an oval or nearly

globular sac, and two specimens in which the chorion was half stretched. These latter embryos were still working vigorously, but had not quite completed the stretching operation, as a third of either anterior or posterior end was still doubled on the rest of the body, no room having as yet been gained for the animal to lie completely outstretched.*

In this man a very few embryos still found their way into the circulation, but there certainly was no free communication between the lymphatics of the scrotum and the blood.

21st May.—Scrotum removed, skin of penis being preserved. I quite expected to find the parent worm in this case, but although the scrotum was cut up into very small pieces and carefully searched, no trace of the animal was observed. The tissues were much more dense than is usual in lymph scrotum, and their bulk was considerably greater than obtains in the generality of these cases. In fact it appeared, but for the vesicles and discharge, more like an ordinary case of elephantiasis. No lymph could be made to regurgitate by pressure on the groin glands.

10th June.—Case doing well. Since the operation the blood was frequently examined, and at suitable times, but no filariæ were found in it.

Here, then, are two cases in which the ova of the parasite were found in the lymphatics. It is evident that my first case was not exceptional. Occasionally, ova *are* passed into the lymphatics. Like other animals, therefore, the parent filaria is liable to miscarry. This, at first sight, would appear to be a matter of little importance, but reflection will show that this is by no means the case. The accident is fraught with danger, and is in fact the cause of the elephantoid diseases, and the key to their intimate pathology.

In the instances in which the parent worm has been discovered she was found in lymphatic vessels on the distal side of the glands. This has been shown to be in many, if not in all, cases her normal habitat. Her progeny, therefore, must travel along the afferent vessels, through the glands, and so on to the thoracic duct, and thence into the blood. The long, sinuous, and powerful body of the embryo is well adapted to perform this journey. But suppose, instead of this mature embryo, an ovum is launched into the lymph stream prematurely, and before the contained embryo has sufficiently extended its chorion, then this passive ovum must certainly be arrested at the first lymphatic gland to which it is carried by the advancing lymph current. It measures $\frac{1}{750}''$ × $\frac{1}{500}''$, whereas the outstretched embryo is only about $\frac{1}{3000}''$ in diameter. It is much too large to pass the glands, and the embryo, rolled up in its chorional envelope, cannot aid itself. It becomes, in fact, an embolus. Now filariæ are prodigiously prolific. Myriads of young are expelled in a very short time. I have watched the process of parturition in the minute filaria corvi torquati. Every few seconds a peristaltic contraction, beginning low down in the uterine horns and extending to the vagina, expels some 20 or 30 embryos. If this process of parturition occurs prematurely, or peristalsis is too vigorous, and extends to a point high up in the uterine horns where the embryo has not yet completely stretched its chorional envelope, then *ova* are expelled. These, as they reach the glands, where the afferent lymphatic breaks up into fine capillary vessels, act as emboli, and plug up the lymph channels one after another until the fluid that carries them can no longer pass. In this way the gland or glands directly

* For a description of the process of chorion-stretching here alluded to, the reader is referred to the Customs *Medical Reports*, xiii, 31, and xiv, 11.

connected with the lymphatic in which the aborting female is lodged are thoroughly obstructed. Anastomoses for a time will aid the passage of lymph, but the anastomosing vessels will carry the embolic ova as well as the lymph. The corresponding glands will then, in their turn, be invaded, and so on until the entire lymphatic system connected directly or indirectly with the vessel in which the parent worm is lodged becomes obstructed.

This, I believe, is the true pathology of the elephantoid diseases: 1st, parent filaria in a distal lymphatic; 2nd, premature expulsion of ova; 3rd, embolism of lymphatic glands by ova; 4th, stasis of lymph; 5th, regurgitation of lymph and partial compensation by anastomoses; 6th, renewed or continued premature expulsion of ova; 7th, further embolism of glands. This process, according to the part of the lymphatic system it occurs in, the frequency of its recurrence, and its completeness, explains every variety of elephantoid disease.

It would be tedious to apply the theory in detail. One has but to locate in imagination an aborting female filaria in the different lymphatic areas, and follow out in his mind the effect of embolism of all or part of the lymphatic circle, in order to recognise the key to an entire group of diseases. If we bear in mind what must be the effect of injury, gravitation, diathesis, and so on, on the areas of lymphatic congestion, and do not overlook the circumstance that the lymphatics of one side of the body anastomose with those of the other, there is no fact or variety of filaria disease which this theory does not fully explain.

It may be objected that I have assumed too much in supposing that the parent worm is liable to miscarry. But I have sufficient evidence in the two cases I have narrated that it has occurred; and if it has happened twice in a limited number of cases, it certainly happens not unfrequently. Perhaps I have examined lymph from scrotum, glands or urine in 200 cases; yet, in this limited number of observations, evidence of premature birth of ova was obtained twice. Therefore the thing cannot be of very rare occurrence, although to have sampled the lymph at the proper time and in a suitable case must be regarded as a fortunate circumstance not often to be encountered. I trust that the theory I have propounded will not be condemned off-hand, but that observers will patiently work out the cases they meet, examining thoroughly the sediments of lymph from scrotum, glands or urine. If this be done by three or four conscientious workers with suitable opportunities, some one, before many years are over, will find the ova in the lymph just as I have done. With these before him, let him try to account for their presence, and attempt to follow out in imagination the effect of their passage along the lymphatic vessels. I feel sure he will arrive at the conclusions I have expressed, and that he will become a convert to the parasitic theory of elephantoid disease.

Abscess caused by Death of Parent Filaria.

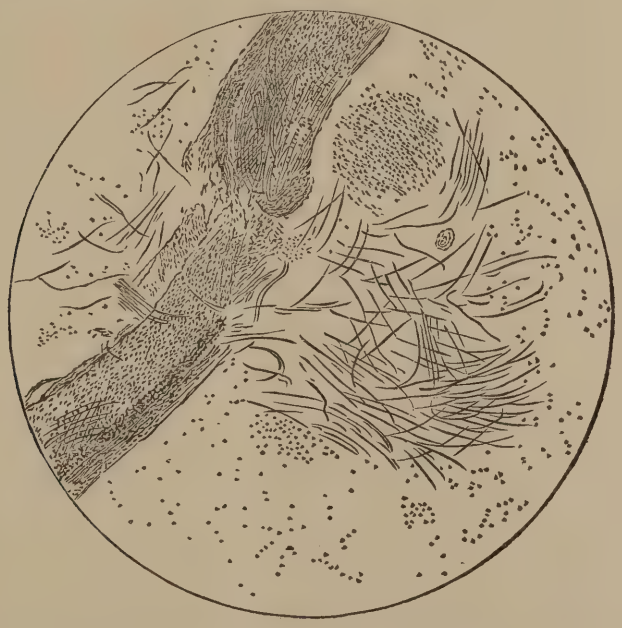
The explanation I have given of the manner in which elephantoid disease is produced applies to most, if not to all, diseases, with one exception, which result from the presence of the parasite in the human body. There is one exception. *Death* of the parent parasite may give rise to abscess, and the frequency with which abscess of the scrotum or thigh is met

with in Chinese practice here is, in my opinion, attributable to this. The following case was certainly of this nature:—

Case 63. *Abscess in the Thigh caused by the Death of the Parent Filaria; Varicose Groin Glands; Fragments of mature Worm in the contents of Abscess.*

7th January 1881.—A middle-aged, well-nourished man came to hospital to-day with a large, hard, brawny-red swelling in the upper and inner part of the right thigh. An abscess was evidently forming. I observed that the corresponding femoral glands were somewhat enlarged, softish, and not inflamed; and he said they had been swollen long before the present trouble began. He also had had fever, apparently lymphatic. Accordingly, I concluded that the glands were filarious, and that their enlargement was not secondary to the inflammation then existing. I drew off from them with a hypodermic syringe some milky lymph. In this a very imperfect and hurried search was made for embryos, but none were found. *Diagnosis:*—Abscess caused by death of parent filaria in lymphatics. Pus, apparently, had not formed, so mercurial ointment was ordered to be rubbed into the swelling, and poultices to be applied.

10th January.—Returned this morning in great pain; matter had formed. Free incision gave vent to about 4 ounces of dark yellow-brown pus, in which floated two or three dark clots of blood, evidently effused for some time. The pus and clots were all collected, and this evening I carefully searched them. By drawing a needle rapidly through the pus, I succeeded in entangling three or four fibres, which, on being subjected to microscopical examination, proved to be fragments of a mature female filaria. In one fragment were large numbers of fully-formed outstretched embryos, all dead and granular, great bunches of them escaping from rents in the wall of the uterus; other fragments were crowded with ova at an earlier stage of development. (*See* illustration.)



Fragment of Female Filaria Sanguinis Hominis from Abscess in Thigh, showing Remains of Alimentary Canal, Decomposing Body, Dead Embryos escaped from Ruptured Uterus; one Ovum visible.

25th January.—Filariæ have been found in this man's blood every night till date. To-night I found two active specimens in a slide of finger-blood drawn at 7 P.M. The wound is healing, and the surrounding induration has disappeared; but the glands, especially the femoral, are still swollen on the right side. He tells me that these glands have been big—but on this side only—for over 10 years, and that once, long ago, they were inflamed. For a year or two he has had very little fever, but formerly was more subject to it.

28th January.—This afternoon, pierced the enlarged femoral glands and drew off, rapidly dropping, about 2 ounces of salmon-coloured lymph. (Dr. JAMIESON of Shanghai was present.) In one slide of this lymph found a very languid and faintly granular embryo. One slide of blood drawn and examined at 6 P.M. contained one active embryo.

14th February.—Two drachms of lymph drawn from glands. A full slide of this contained 12 active filariæ. One of these examined with a high power looked perfectly healthy and normal.

This man remained under observation for about two months after the abscess was opened, and therefore after the death of the parent filaria which was connected with the enlarged femoral glands; yet during all this time his blood contained at the usual hours a fair stock of embryos—apparently as many at the end of the two months as at the beginning. It is fair to infer from this, either that there were other mature female worms alive in his lymphatics, or, if the dead specimen removed from his thigh was the only one, that the young filariæ keep alive for several months both in lymph and blood.

Dr. P. Manson's Report on the Health of Amoy for the Half-year ended 31st March 1882.

During the six months, the health of the community, both native and foreign, has been good. In autumn, within certain districts a severe and often fatal form of remittent fever prevailed; but the areas in which this was epidemic were very limited. The population as a whole was not implicated, and the disease did not attack any foreigners.

The following were the deaths during the six months:—

Sailor	Intermittent fever.
Portuguese (female)	Phthisis.
Sailor	Cirrhosis of liver—ascites.
Infant	Convulsions.

Dr. W. W. Myers's Report on the Health of Takow and Taiwan-fu (Anping) for the Year ended 31st March 1882.

The health of the community during the period under review has been on the whole very good. No deaths have to be recorded either from ships or among the residents. But little, therefore, remains for me to say under this head. Before passing on, however, to report on the included settlement at Taiwan-fu (Anping), I am constrained by further experience once more to call attention to the peculiarly good effects apparently produced on tubercular disease by residence in Takow. I am not unmindful that it is by no means uncommon for various places and climates to be vaunted as being specially suitable to consumptives; and I am also aware that further trial has very often failed to establish the reputation the primary description would seem to warrant.

With this before me, I have been naturally more cautious in forming the opinion I now express, namely, that even in very advanced cases of pulmonary disease, residence at this port materially modifies the distressing symptoms, and in a great number of instances, not necessarily of recent standing, the progress of the disease seems to be arrested, weight increased, and a comparatively satisfactory condition of health attained. There are several cases which I might quote, both from private and native practice, in illustration of the views I advance; but it will perhaps be sufficient if I briefly mention one or two of the most typical, whose state elsewhere warrants the supposition that resort to Takow entailed improvement in their condition.

A late resident, with marked hereditary tendency and considerable personal disease, undoubtedly acquired a degree of health and comfort unattainable elsewhere. During the two years she was under my observation the disease, the previous activity of which was readily made out, seemed to be arrested, and so confident was I that this happy effect was due to local influences that I felt it my duty to warn both herself and her friends of the probable consequences of departure from Takow.

About a couple of months after leaving this port, I gathered that the disease had once more begun to progress, and a month after that I was informed of her death. I have no hesitation in asserting my belief that had the patient been able to remain here, the malady would have lain dormant for a much longer period, and without, of course, attempting to define its duration, that life would consequently have been considerably prolonged.

My predecessors have already reported on patients suffering from phthisis who have been unusually benefited by residence here, and I will therefore content myself with referring to another case, viz., one of tubercular laryngitis, the fatal termination of which I recorded last year.

The subject of it, also with the very strongest hereditary taint, had, on account of certain ominous symptoms manifested some years ago, been recommended by Dr. P. Manson to come here. This he was able to do, with the result, as the patient himself informed me, of acquiring during his stay of six years such "robust health that he had so far forgotten his previous tendency when he went on leave to England as to lead him to believe all danger past." He had not been long away, however, before the malady once

more showed itself, taking the form above indicated, and although he hurried back, matters had gone beyond the limits of possible amelioration. Though this case, therefore, cannot be quoted as evidence of the curative properties sometimes observable in the climate, still, when I recall the suffering generally associated with laryngitis and its almost complete modification in the case under notice, I feel justified, as the outcome of most careful observation, in ascribing this result to climatic influences, and recording the fact with an appreciation readily comprehended by those who have had to watch cases less favourably affected.

In a word, therefore, while by no means asserting that phthisis, no matter how desperate its extent, can be cured by living in Takow, still I believe that, from causes which I cannot entirely explain, a degree of comfort, even in advanced cases, can be acquired which would be gratefully appreciated by many to whom the sufferings preceding death, so often experienced in other places, are felt to be less bearable than the prospect of that which under any circumstances is inevitable.

In seeking for the cause, I cannot say that I have arrived at a completely satisfactory conclusion. The more marked effects would seem to be confined to the locality comprehended by the settlement, and in this area I am not aware of any modification in the results obtained by varying the altitude or site of residence. For instance, with cases resident at Anping, though one meets with those more or less beneficial effects generally found in a temperately warm and equable climate, still, when disease has either been progressing or the symptoms have become more than usually annoying, I have been able, by moving the patient to Takow, to obtain what seemed to be either a cessation of disease itself or such a modification of its manifestations as to give the greatest possible satisfaction to both the sufferer and myself.

Taking only the fact that Anping and Takow have the same access to the sea breezes and nearly the same atmospheric conditions, I should be at a loss to account for the superiority of the latter if the cause were only to be sought in this way; and I am therefore inclined to ascribe a good deal to the presence of sulphurous acid, with which the air in the immediate vicinity of our settlement is moderately charged. Both on the hills forming the westward boundary of the harbour and at their base on the shores of the lagoon, just above high-water mark, are several sulphur springs, from which a discharge of gas takes place at all times. From the position of these springs in relation to the hills, the gases emanating from them are equally disseminated over the settlement by the winds of either monsoon. That of the north-east is concentrated as it passes down the funnel-like valley prior to reaching the settlement, while the south-west breezes, obstructed by those hills, so to speak rebound from them. This is a theoretical, but I do not think an improbable, method of accounting for a fact not easily explained otherwise. From the time when, as pupil and dresser to Professor Lister, my attention was first directed to the general efficacy of antiseptics in certain conditions, I was led to try carbolic inhalations in phthisis, and in my first Medical Report on Chefoo,* written in 1872, it will be seen that I called attention to the benefits derivable from their use. The researches which have taken place from time to time as to the nature and origin of tuberculosis, the more prominent of which are those lately published by Koch,

* Customs *Medical Reports*, iii, 39.

readily explain the rationale of their action. Within the last year, Dr. SINCLAIR COGHILL, of Ventnor, has called special attention to the effects of antiseptic inhalations in pulmonary disease, and has, I believe, also devised some form of respirator. It would seem that several others, having adopted this treatment, also speak enthusiastically of it. In the application of a general principle established and popularised by the founder of what has now become an all but universally accepted system, one can scarcely claim credit for carrying out ideas in directions the exact and unimportant details of which are not precisely defined by the originator of the principles acted on. It seems to me, however, that these facts all tend to support the suggestions I submit as to the probable cause of that with which I am just now particularly concerned. The much-lauded benefit of the so-called "sulphur cure" for pulmonary disease will, perhaps, be remembered, and although there was, no doubt, much exaggeration connected with its introduction, subsequent trial has shown that a considerable amount of good may be derived from the application of sulphurous acid in reasonable and bearable quantity, and that therefore its presence in the air here may be one of the causes of the local condition I have described. It is true that Formosa would seem to be a somewhat remote place for consumptives to resort to, but when one remembers how many there are who are able and willing to expend both trouble and money in obtaining relief, however slight, I am led to think by my observations that the desiderata so longed for by invalids thus afflicted may be looked for from residence at Takow.

Filaria Sanguinis Hominis.—I regret to be unable as yet to furnish further particulars, on account of the difficulty I find in getting the filaria-nurturing mosquito, brought from Amoy, to live long enough to enable me to carry on my experiments on monkeys. I am inclined to believe that the primary cause of their mortality lies in the Formosa water, but I yet hope, by getting over at the same time a sufficient supply of Amoy water, to be able to do something in this direction. My description of the Formosa mosquitos also stands over for completion. With reference to the absence of elephantiasis and allied diseases attributable to filarial infection in South Formosa, I have been able to obtain further valuable confirmation from Dr. P. ANDERSON, of the English Presbyterian Mission, who has had for the past six months almost the whole work of the outlying stations thrown on his shoulders. He has thus been obliged to visit from time to time many parts of the country, and I am therefore enabled to avail myself of his valuable corroboration, which, when added to the information already afforded me by my other missionary friends, would seem almost conclusive. Referring to the question of water-drinking among the Chinese, especially among the labouring classes, I am in a position fully to confirm all that Dr. MANSON has said. Coolies and field labourers while at work quench their thirst by resort to the nearest water quite as frequently as do men in other parts of the world. In middle life, or after some severe or chronic illness, there does seem to be a superstition against drinking cold water, and the well-to-do are somewhat strict in observing this prohibition, their poorer neighbours also doing it as well as circumstances will admit. But up to a certain time of life, that is, among the young and healthy, I cannot find that any general rule is laid down or followed. These remarks apply only to those parts of China I have been resident in, and need have no bearing on Dr. SOMERVILLE'S observations in the limited district to which he alluded.

Manson Memorial Hospital.—The attendance during the past year has amounted to about 2,200 in and out patients, amongst whom, though there were the usual number and variety of cases, but few call for special notice.

An amputation for elephantiasis scroti, in the person of an Amoy man who had come here suffering from the disease seven or eight years previously, was, I regret to say, unsuccessful, in consequence of secondary lesions.

Another case (necrosis of radius), though presenting nothing of extraordinary interest in as far as the immediate disease and its treatment is concerned, may be mentioned, as its bearing on the accepted theories of syphilis is decidedly peculiar.

The patient—a prostitute—gave the following history on admission. Five years previously she had contracted primary syphilis, followed in due course by secondary symptoms. This, after what appears to have been a pretty severe course of mercurial treatment at the hands of native practitioners, was, by her account, cured; and she enjoyed good health up to about 18 months prior to her application at the hospital. She was attacked at that time, however, with what would seem to have been periostitis of the long bones. Some months afterwards, abscesses formed in the right forearm, from which dead bone was occasionally discharged. On examination, she was found to be considerably debilitated, with distinct nodes on both tibiæ; while the radius was diseased along its whole length. After suitable preparatory treatment I excised the bone, with very good after results. During the time she was in hospital, and before operation, a patient under my care for gonorrhœa, with urethral chancre, pointed her out as the source of his malady; and I am in this case able to assert positively that he had neither previously nor since been in a position to contract disease elsewhere. I immediately examined the woman and found her suffering from an acute vaginitis; but although I looked carefully I could find no sign of abrasion nor ulceration. The contact from which infection had taken place occurred about a week prior to this investigation. She had not said a word of her vaginal complaint, which, however, soon gave way to astringent injections, with iodide of potassium internally. The male patient exhibited in due course all the manifestations of secondary disease.

Some interesting questions arise out of these cases; for instance, was the woman the subject of tertiary syphilis; and while so, did she communicate the disease in its primary form to another? Again, it may have been that in pursuit of her calling she had herself been brought in contact with fresh virus, to which her fortified condition only admitted action in the form of vaginitis, through which it was passed on to one more amenable to its effects. A further interest attaches itself to the case of the man, inasmuch as his malady took that form which, it will be remembered, led JOHN HUNTER to assert that gonorrhœa was capable of producing secondary disease. Here the chancre was situated somewhat low down in the urethra, and was not easily discoverable at first.

Hepatic Abscess.—As far as my experience goes, this form of disease is somewhat rare among natives. One case presented itself during the past year which appeared to yield to operation, of course performed with antiseptic precautions.

Under this head I might allude to the not uncommon occurrence of purulent accumulation in the parietes above, or in localities adjoining, the liver, which may so closely simulate abscess of that organ as to be apt to mislead. Empyema has undoubtedly been frequently mistaken for abscess of the liver, and a case reported a few years ago from

Shanghai, when criticised by a prominent English surgeon, appeared to find its natural place among instances of mistaken diagnosis. This, however, is only one of the many difficulties that surround the diagnosis of this often obscure lesion. I would desire to guard myself against being thought to wish in any way to disparage what has been done in undoubtedly genuine cases by practitioners in India and China. On the contrary, the results sometimes attained afford grounds for hope in a disease that unhappily seems to be of somewhat frequent occurrence among Europeans in both countries, and which necessarily excites the gravest anxiety.

Native appreciation of foreign medicine in South Formosa seems to me to be more conspicuous than in other parts of this Empire, and is certainly of longer standing. This is undoubtedly due to the medical practice and teachings of Dr. JAMES MAXWELL, of the English Presbyterian Mission. I have seldom heard of a foreigner succeeding in ingratiating himself with the Chinese to the universal extent Dr. MAXWELL appears to have done in this island. Go where you will (not excluding some savage districts), "MA I-seng" is spontaneously spoken of and kindly inquired after, while the frequent presence of some one or other who, either in the person of himself or his relations, has been treated by Dr. MAXWELL, engenders a state of confidence which renders further intercourse easy. The greater distance you are away from the city or other places where outside influences are apt to prevail, the more you notice that induced willingness to put aside those superstitions and prejudices that so frequently bar the progress of foreign medicine on the mainland of China. In bringing about this state of affairs, although to Dr. MAXWELL, as the originator, favoured with greater opportunities of coming in contact with the country people, is due the major part of the credit, still a very great deal of praise must be rendered to those who, as his successors at the Takow and Taiwan-fu native hospitals, so ably carried on the good work he began; and it behoves us whose turn it is to assume the duty, to take care that everything is done to continue and increase the native confidence, and especially that it is not imposed on by those whose only motive can be personal aggrandisement.

I have been induced to make the foregoing remarks by the fact of there having sprung up in Formosa a horde of charlatans who, under the guise of having been connected with foreigners—no matter in what capacity,—and therefore authorised to dispense Western medicine, will, if not checked, in course of time do much to destroy the good previously accomplished. A man under some pretence or other obtains contact or reputed connexion with foreigners. Having thus secured the essential point, he proceeds as best he may to obtain a smattering of the names of certain foreign drugs, with a still slighter knowledge of their use, and, with naturally no ability whatever to diagnose the diseases to which these medicines are applicable, goes forth and styles himself a "thoroughly instructed Western physician." The preliminary instruction, I may remark, is imparted in a course extending over one or two months by some other miscreant who has already been introduced to the trade; and books or tables are drawn up to aid in this tuition, which, like the pidgin-English primer, is but a garbled counterfeit of the original it purports to represent. The audacity of these quacks quite equals that of their *confrères* in the West, and even their artifices take somewhat of the same form. Thus the most necessary article of equipment is a leaden or pewter

casting closely resembling in shape the ordinary physician's stethoscope. This is impartially applied to every patient immediately on presenting himself, and to any portion of the body that is stated to be affected. Of course, mysterious properties are attributed to it by its user, and some portion of the secret of foreign skill is ascribed to its use. Others go the length of purchasing eye instruments (which, unfortunately, they sometimes use), and midwifery and amputating cases, which, happily, as far as I know, they have hitherto contented themselves with exhibiting at stated intervals; else, with their utter ignorance of anatomy, disaster much more palpable, if not more serious, than that which already takes place must long ere this have occurred. With reference to vaccination, thanks to the influences I have before spoken of, not only is its efficacy a fact readily accepted, but the operation is eagerly sought after. Could a staff of trustworthy men be got together they might soon be taught this simple operation, and if kept supplied with genuine lymph, they would in a short time be able to spread its blessings over the whole country. As a proof of the anxiety shown by the people to avail themselves of this protective, I may mention that they willingly pay the impostors $1 for every male and 50 cents for every female child vaccinated. In response to this demand, a gang of remorseless wretches—in many instances armed only with capillary tubes, which they fill with any fluid, from dirty water up to pus—have gone over the country pretending to vaccinate. I regret to say that through this a condition of incredulity is being set up, and, what is worse, even loss of life has followed the practice. At a village not far from this place a great number of children are reported to have died after inoculation with a fluid which had been styled vaccine lymph, and this event has naturally caused some little sensation. Mr. Consul PHILLIPS, who takes a kindly interest in all such matters, was good enough to represent the case to the late Taotai; but if any steps were taken by that official, the effect would seem to have passed away, for the evil is as rampant as ever. These persons adopt a cunning method of ingratiating themselves with the public, stating something like the following: "We have received from the foreigner all the knowledge about disease he is capable of imparting; we are Chinese, and therefore understand the Chinese constitution in a way foreigners never can. We are therefore better able than they are to discover and treat disease in our countrymen, while at the same time we can so modify the effect of the strong foreign medicines as to extract all the good from them, while avoiding any baneful effects that might follow their administration by persons not equally conversant with the systems of the recipients." Were these men to content themselves with merely distributing, say, a drug like quinine, there would, perhaps, be not so much room for anxiety; but when I mention atropia, morphia, and strychnia, as also various tinctures, as of belladonna and digitalis, with DOVER'S powder (chiefly used as a specific for the consequences of dental irritation in children), as occupying prominent places in the list of drugs for ordinary use, but little need be said to show the dangers run. Travelling from place to place, the natural consequences of their criminality do not overtake them so quickly as might otherwise be the case; besides which, although the Chinese may at the moment, and without particular reference to the justice of the assertion, blame whatever medical man has last had control of a case, yet so fatalistic are their ideas in matters of this sort, that the feeling of resentment soon wears off, and the incident is forgotten.

In the total absence of any official system of inquiry into deaths associated, to however slight an extent, with the possibility of natural causes, the risk of interference from this source is reduced to a minimum. Of course, if things go on as they do now, and the number of illicit practitioners increases, a day must come when public attention will be aroused; but I fear that those in whose name these acts have been committed will run a chance, unless something is done to avoid it, of being selected as the objects of resentment in lieu of those really guilty.

There can be no doubt that it would be a great aid towards propagating the benefits of foreign medical science if duly instructed natives could be sent out. By "duly instructed," I mean men who have been taught, as far as it is possible, anatomy and physiology, and, subsequently, the higher departments connected with the practice of medicine; but I doubt whether this could be accomplished by mere connexion with the hospital as assistants, although a great deal of practical information might thus be gained, which, when taken with the other, would be invaluable.

I believe that a knowledge of English, French or German is the first, the easiest, and the most essential step towards the acquirement of professional knowledge. The best way of bringing this about would be to send a certain number of Chinese to the medical schools in Europe or America; but as the many difficulties surrounding this plan are often practically insurmountable, the alternative of binding over such persons as might be desirous of instruction for a period of three or four years, teaching them English, and, with the aid of models, plates, etc., the other subjects more immediately connected with their future duties, would provide men sufficiently capable, and whose education would guard them against the perpetration of those errors which are almost certain to be committed by anyone less informed. Acting on this view, two years ago I was able to secure two apprentices who have bound themselves to prosecute their studies under me for a period of three to four years. English has hitherto been the chief subject of study, and now they both have acquired a very fair knowledge of that language. Some kind friends at home have promptly responded to an appeal I made for the gift of a French anatomical manikin, and I am glad to say the cost (£60) has been nearly subscribed. This, with the books, plates, etc., of which I possess the necessary amount, will, I trust, simplify matters and enable me to attain my object. The chief apprentice acts at the same time as hospital assistant, and, I believe, really takes interest in his work. The principal attraction, of course, lies in the certainty that, when once pronounced fit to start in practice on his own account, with the backing I promise to give him should he satisfy such of my professional brethren as I can get together with myself, that he is worthy of the trust, he will be able to secure such returns as but few other callings open to him are likely to afford.

I must not conclude my remarks on hospitals without alluding to the good and extensive work being done by my colleague, Dr. ANDERSON, in the mission hospital at Taiwan-fu. Both from its larger size and central position in the capital city he necessarily sees a great many more patients in the year than can fall to my lot here. Both in medicine and surgery a large number of interesting cases present themselves for treatment, and the statistics from the institution under his charge show most satisfactory results.

Opium-smoking.—While looking over some books the other day, I came across a record of den-to-den visitation made by the late Dr. J. R. CARMICHAEL, when attached to the London Mission at Canton, in 1862.

As this question is exciting some interest at the present moment, I subjoin a copy of the tables he drew up. As far as I know, this will be the first statement of the kind published. It is evident that Dr. CARMICHAEL carefully weighed the quantities which he notes, but it seems possible that they indicate the amount being smoked at the time of the investigation, and in this case should be multiplied by 3, or at least 2 (these being the probable number of times people indulge in a day), in order to obtain the whole amount daily consumed; otherwise the quantities given could not be reconciled with the known amounts consumed in a day by average smokers.*

Be this as it may, with the exception of a column wherein, for convenience of reference, I have made an approximate calculation of the corresponding Chinese weights—taking the mace as equal to a drachm,—the paper is essentially an exact copy of the original.

A TABULAR STATEMENT in reference to OPIUM-SMOKING amongst the People of CANTON.

The several cases were investigated and collected in the various 'opium dens' in the western suburbs and in the vicinity of the hospital during the summer of 1862.—J. R. C.

OCCUPATION.	Quantity consumed daily.	Mace (approximately).	Age.	No. of Years.	REMARKS.
Fish-dealer	40 grains	0.7	45	3	General debility.
Money-changer	1½ drachms	1.5	57	32	Phthisis, dulness left apex; pale and thin.
Money-changer	1½ ,,	1.5	56	15	Thin; good health.
Gambler	3 ,,	3	51	30	Fearfully thin and haggard.
Tea-dryer	1 ,,	1	30	10	Good health.
Opium-dealer	1 ,,	1	35	5	Good health; rather thin.
Opium-dealer	2 ,,	2	35	10	Thin; depressed appearance.
Mendicant	1 ,,	1	53	10	Good health.
No occupation	1½ ,,	1.5	32	15	Depressed appearance.
Tobacco-dealer	1 ,,	1	33	6	Pale, thin, depressed, etc.
Bamboo-house builder	1½ ,,	1.5	45	8	Depraved look.
Tea-dealer	1 ,,	1	37	22	Good health; pale, thin.
Tea-dealer	1½ ,,	1.5	23	4	Good health.
Mandarin's follower	1½ ,,	1.5	49	10	Thin; exceedingly depressed.
Watchman	1½ ,,	1.5	43	5	Good health; depraved.
Fortune-teller	80 grains	1.33	38	10	Good health; depraved.
Silk-dealer	1 drachm	1	54	30	Thin, pale, depraved.
Fruit-dealer	½ ,,	0.5	20	2	Excellent health.
Fruit-dealer	1 ,,	1	22	2	Pale; good health.
Student	3 ,,	3	35	18	Dyspepsia; dreadfully debilitated.
Shoemaker	½ ,,	0.5	40	5	Good health; thin.
Papermaker	1 ,,	1	28	7	Cough; good health.

* Since writing the above, I notice that Dr. DUDGEON, in his review of the Customs *Opium* publication, states as follows with reference to the daily consumption of opium per head: "Forty years ago it was calculated in candareens, a heavy smoker in those early days having his habit satisfied with a small amount. From that time till this the amount consumed has gone on gradually increasing. This is not to be explained on any other hypothesis than adulteration." Further on he quotes 3 candareens as being the average consumption of 30 years ago, and as Dr. CARMICHAEL'S records were taken 20 years ago, the quantities given by him may, after all, represent the whole daily consumption.

Occupation.	Quantity consumed daily.	Mace (approximately).	Age.	No. of Years.	Remarks.
No occupation	50 grains	0.83	50	30	Thin; depraved.
No occupation	20 „	0.33	27	1	Very depraved appearance.
Fruit-dealer	20 „	0.33	18	2	Good health.
No occupation	1 drachm	1	46	20	Thin; good health.
No occupation	2 „	2	37	20	Good health; thin.
Fish-dealer	1 „	1	34	8	Good health; depraved.
No occupation	1 „	1	30	3	Good health.
No occupation	1½ „	1.5	58	30	Quite stout and healthy.
No occupation	½ „	0.5	27	3	Good health; pale.
Painter of porcelain	40 grains	0.7	42	2	Good health; stout.
No occupation	2 drachms	2	32	15	Pale; good health.
No occupation	6½ grains	0.1	26	1	Good health.
Cook	1 drachm	1	33	10	Depraved appearance; good health.
No occupation	1½ „	1.5	45	6	Good health; thin.
Baker	1½ „	1.5	30	10	Good health.
Master of opium-shop	3 „	3	38	10	Frightfully thin.
Barber	1 „	1	36	5	Good health; thin.
Dealer in flowers	1 „	1	20	5	Very thin; depraved.
No occupation	20 grains	0.33	43	4	Strumous; thin.
Watchman	1 drachm	1	41	20	Good health.
Watchman	1½ „	1.5	40	15	Chronic cough.
Dealer in sundries	40 grains	0.7	42	20	Good health.
Dealer in the drug	2 drachms	2	53	30	Very thin and sallow.
No occupation	20 grains	0.33	72	20	Good health.
No occupation	20 „	0.33	40	5	Good health; thin.
Public singer	40 „	0.7	44	11	Good health; thin.
Watchman	1 drachm	1	38	18	Good health.
Chinese physician	80 grains	1.33	60	40	Good health.
Sailor	½ drachm	0.5	45	15	Good health; thin.
Shopkeeper	½ „	0.5	50	30	Quite stout; good health.
Dealer in old things	1 „	1	42	20	Thin, depraved.
Neglected to ascertain occupation	1 „	1	40	8	Emaciated; good health.
	1 „	1	64	40	Sallow; good health.
	½ „	0.5	53	7	Sallow; good health.
	½ „	0.5	51	8	Thin; good health.
Cook	1 „	1	45	10	Good health.
Public singer, blind from 7 years of age	4 „	4	30	8	This was the most disgusting object I had as yet seen in these opium hells; *quite* blind, with a dirty-white complexion; complains of an exhausting diarrhœa; earnestly desires to give up the opium.
Dealer in herbs	1½ „	1.5	40	10	Depraved aspect; good health.
Boatman	1 „	1	38	3	Fearfully depraved.
Boatman	½ „	0.5	35	13	Rather weak and thin.
Builder	½ „	0.5	36	2	Cunning expression.
Carpenter	4 „	4	38	11	Dyspepsia.
Farmer	1 „	1	31	13	Good health.
Tobacco-dealer	2 „	2	23	1	Anæmic; weak.
Sing-song house	1 „	1	18	3	Good health.
Boatman	1 „	1	34	18	Highly nervous.
Barber	1 „	1	44	15	Pale, thin; good health.
Gambler	2 „	2	32	4	Good health.
Student	1 „	1	31	10	Good health.
Boatman	2 „	2	30	15	Thin; dusky hue.
Boatman	4 „	4	22	4	Good health; pale.
Pawnbroker	½ „	0.5	51	14	Good health.
Taoist priest	1 „	1	44	20	Dreadfully thin; good health.
Cook in brothel	1 drachm	1	35	17	Good health.
Singer „	2 „	2	35	13	Good health.
Cook „	80 grains	1.33	34	15	Depraved in appearance.
Cook „	1 drachm	1	36	12	Good health.
Wood-dealer	80 grains	1.33	34	20	Good health; cough.
Boatman	½ drachm	0.5	35	7	Good health; rather sallow.

Occupation.	Quantity consumed daily.	Mace (approximately).	Age.	No. of Years.	Remarks.
Occupation not ascertained	40 grains	0.7	47	22	Depraved in appearance.
	1 drachm	1	42	12	Good health; rather thin.
	2 „	2	34	20	Very depraved; no disease.
	½ „	0.5	50	10	Good health; jolly-looking cove.
	20 grains	0.33	35	5	Good health; rather dejected.
	½ drachm	0.5	28	6	Good health; rather thin.
Watchman	1 „	1	38	10	Most depraved-looking fellow.
Gambler	2 „	2	36	8	Good health; thin.
Old clothes dealer, formerly student	1 „	1	18	2	Good health.
Confectioner	40 grains	0.7	25	18	Asthma.
Farmer	20 „	0.33	26	11	Good health.
No occupation	1 „	1	21	2	Excellent health.
Green-dealer	1 „	1	31	10	Excellent health.
Cook	1 „	1	40	11	Thin, depraved.
Opium-dealer	20 grains	0.33	35	3	Pale, thin; rather weak.
Old dealer	1 drachm	1	27	7	Very good health.
No occupation	½ „	0.5	44	5	Good health.
Tea-preparer	80 grains	1.33	32	10	Excellent health.
Stone-cutter	10 „	0.17	60	7	Excellent health.
Cook	40 „	0.7	30	10	Rheumatism.
Cook	1 drachm	1	26	4	Rather nervous.
Carrier	1 „	1	35	11	Good health; thin.

It ought to be mentioned that among the foregoing cases *not one* of *actual disease* occurred except *when specially stated.* (The italics are Dr. Carmichael's.)

Taiwan-fu (Anping).—In consequence of the delay in dredging the Takow Harbour, a good portion of the direct trade that used to come to Takow has been diverted to the port of Taiwan-fu (Anping), which district has of late years shown unusual activity in the production of sugar and the consumption of opium. This, no doubt, coupled with the strong mercantile tendency there always is to be as near as possible to the "city of the port," has combined to give a much greater importance in recent times to the settlement formed up there, and which it would seem must increase as time goes on, unless something is done towards deepening the lagoon at Takow. But few foreigners outside of the missionary community reside in the city of Taiwan-fu itself, their houses, godowns, etc., being situated at the village of Anping, just below the old Dutch fort Zelandia, close to the seashore. This place is separated from Taiwan-fu by a low-lying plain, from which, since the time of the Dutch occupation, the sea has in great part receded. Anping itself is about a mile from the coast, on the banks of a creek that in one direction runs up to Taiwan-fu and in another communicates with a stream. At the mouth of this creek lies the celebrated Anping Bar, to cross which it is necessary to get into tubs placed on bamboo catamarans.

The plain itself at high water, especially in the neighbourhood of Anping, is in several places submerged, and, becoming uncovered at extreme ebb, exposes large tracts during certain portions of the day to the rays of the sun. From a sanitary point of view, permanent residence either at Taiwan-fu or at Anping is not likely to be free from objections. Foreigners have, it is true, raised the ground on which their houses are built, and in one instance at least—that of a double-storied dwelling—the greatest possible sanitary precautions have been observed

in construction. Although natural conditions have thus been to some extent modified, I do not feel justified in speaking of the climate as a very desirable one. No doubt, during the day, when the exhilarating sea breezes are blowing, diluting noxious emanations and lowering the temperature, one is inclined for the moment to doubt whether the place can really be as objectionable as experience has proved it. The most prominent ailment is fever, evidently of malarious origin; but the peculiarity of its type attracts special attention. I do not know that I have ever seen a case of what is commonly understood by fever and ague, pure and simple, arise in the Taiwan-fu settlement. On the contrary, the disease common there is distinctly of the typho-malarial or mixed-fever class; indeed, were it not for the marked intermissions, so prominent are many of the typhoid symptoms, including spots, iliac gurgling, intense depression, etc., that one seeing a case for the first time would be very apt to call it typhoid, and to have his fears excited to a greater extent than is always called for. Of course, if often subjected to these influences and attacks, a state of depression is induced which eventually becomes alarming. As far as the mercantile community is concerned, the habit of making Takow head-quarters, and resorting thither as soon as work in Anping is concluded, does much to obviate evil consequences; and in cases of actual attack health is soon recruited by a prolonged stay there. With reference to the permanent residents, a short stay is sufficient to produce in them such appearances and ailments as one would expect from the state of affairs I have described; and, in fact, unless a man was of a perfectly strong and healthy constitution, I imagine he would run no little risk were circumstances to necessitate his remaining long in that city. On these grounds, therefore, it will be very regretful should events so turn out as to call for a fixed settlement in that part of our district.

As a remarkable proof of the peculiar local influences in relation to the characteristic disease of the place, I may allude to the fact that in the north-east monsoon, when the prevailing winds are more or less off the land, persons on board ships lying in the roads who have had no contact whatever with the shore, and to whom no shore water has been supplied, are often stricken with this Taiwan-fu fever, and in their case the consequences are much more grave than those observed among regular residents. In fact, by far the greater number of cases on board ship coming under my notice occur in the vessels lying off Anping.

During the months of December, January and February, the climatic condition is very much improved, and if a similar state obtained during the rest of the year, much less could be said in disparagement.

At present, by means of a small steamer which runs twice a week between Anping and Takow, communication is both easy and regular, and to the kindness of the proprietors I am indebted for the ability to visit that part of my practice at these times.

For the readings from which I have compiled the annexed meteorological abstract, my obligations are due to Mr. Harbour Master FIELD. Taking the last two years' records, the mean temperature at Takow is, for the whole year, about 76°; or for the seven cool months, about 72°, and for the five hot months, 83°.1. In the summer this is about the coolest place in China, the mercury rarely touching 90°, and a fresh breeze generally blowing.

ABSTRACT of METEOROLOGICAL OBSERVATIONS taken by the Customs, Takow, for the Twelve Months ended 31st March 1882. Latitude, 22° 36′ 14″ N.; Longitude, 120° 16′ E.

DATE.	BAROMETER.		THERMOMETERS.				SELF-REGISTERING THERMOMETERS.		RAIN IN 24 HOURS.	WIND: Force as per Naval Scale.		No. of Days in each Month on which no Rain or Snow fell.
			Dry Bulb.		Wet Bulb.		Max. in Air.	Min. in Air.				
	9.30 A.M.	3.30 P.M.	9.30 A.M.	3.30 P.M.	9.30 A.M.	3.30 P.M.	9.30 A.M.	9.30 A.M.		9.30 A.M.	3.30 P.M.	
1881.	*Inch.*	*Inch.*	°	°	°	°	°	°	*Inch.*			
APRIL:—												
Max.	30.19	30.12	86	89	80	81	87	78	.41	5	7	
Mean.	30.10	30.02	78	81	74	75	82	73	.017	2.34	3.43	26
Min.	30.02	29.92	72	72	65	66	72	65	...	1	1	
MAY:—												
Max.	30.24	30.14	88	87	87	83	88	79	1.10	5	7	
Mean.	30.04	29.97	84	84	80	80	85	76.5	.54	2.9	5	26
Min.	29.91	29.84	78	73	74	70	80	68	...	2	2	
JUNE:—												
Max.	30.06	30.95	92	92	87	84	92	82	3	7	7	
Mean.	30.01	29.95	86	85	82	81	87	78	.27	3	4.6	21
Min.	29.86	29.80	77	77	74	75	80	74	...	...	...	
JULY:—												
Max.	30.03	30.01	92	90	85	89	93	83	3.08	10	8	
Mean.	29.89	29.85	81	80	77	82	84	77	.7	4	4	13
Min.	29.74	29.58	77	74	76	76	82	75	...	2	3	
AUGUST:—												
Max.	30.02	29.94	85	86	84	83	89	82	10	10	10	
Mean.	29.84	29.80	82	79	78	76	80	79	1.84	4	5	11
Min.	29.60	29.03	76	77	73	75	79	73	...	2	3	
SEPTEMBER:—												
Max.	30.02	29.95	84	86	83	85	90	90	6	9	8	
Mean.	29.90	29.84	83	83	77	79	87	77	1.5	3	4	23
Min.	29.25	29.10	79	79	77	76	81	72	...	1	2	
OCTOBER:—												
Max.	30.15	30.07	85	84	80	80	89	79	.34	6	7	
Mean.	29.94	29.89	80	84	73	76	84	74	.13	2.9	4.3	22
Min.	29.68	29.64	73	74	69	69	75	68	...	2	2	
NOVEMBER:—												
Max.	30.23	30.15	80	81	75	76	85	77	3			
Mean.	30.13	30.02	73	78	72	73	79	74	.9			31
Min.	30.02	29.96	72	73	68	71	74	70	...			
DECEMBER:—												
Max.	30.32	30.26	78	80	76	77	80	75	1.10			
Mean.	30.14	30.08	73	74	73	75	76	68	1.10			30
Min.	30.07	30.00	68	69	65	67	70	62	1.10			
1882.												
JANUARY:—												
Max.	30.33	30.25	75	77	73	74	79	75	.08			
Mean.	30.22	30.19	71	72	68	69	72.8	67.4	.08			29
Min.	30.08	30.04	64	64	61	62	65	60	...			
FEBRUARY:—												
Max.	30.32	30.24	75	74	72	73	79	70	.35			
Mean.	30.18	30.10	68.2	69.1	66.2	66.6	71.93	61.6	.09			22
Min.	29.93	29.85	61	62	59	59	60	48	...			
MARCH:—												
Max.	30.30	30.15	76	78	74	75	83	73	.65			
Mean.	30.15	30.07	69.4	70.6	67.1	68.3	72.64	61.02	.19			26
Min.	30.02	29.97	66	67	63	64	65	50	...			

Observations no longer taken.

Observations no longer taken.

Dr. E. A. Aldridge's Report on the Health of Hoihow for the Half-year ended 31st March 1882.

Abstract of Meteorological Observations taken at the Custom House for the Six Months ended 31st March 1882. Latitude, 20° 3′ 13″ N.; Longitude, 110° 19′ 3″ E.

Year and Month.	Winds.							Mercurial.				No. of Days Fog.	No. of Days Rain.	Average Rise and Fall of Tides.	
								Barometer.		Thermometer.					
	No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Variable.	No. of Days Calm.	Average Hourly Force.	Highest and Average Highest.	Lowest and Average Lowest.	Highest and Average Highest.	Lowest and Average Lowest.			Highest.	Lowest.
1881.							*Miles.*	*Inch.*	*Inch.*	°	°			*Ft. in.*	*Ft. in.*
October	22	4	...	3	2	...	3	30.17 29.99	29.70 29.94	83 80	71 77	...	11	6 0	5 6
November	28	2	...	...	...	2	3	30.27 30.10	29.94 30.00	79 76	67 74	3	14	5 6	5 0
December	31	...	...	...	...	...	2	30.38 30.19	30.01 30.04	77 70	59 67	2	10	5 0	4 6
1882.															
January	26	3	...	...	2	...	3	30.40 30.23	30.00 30.17	79 68	56 65	3	2	3 6	3 0
February	24	2	...	2	...	...	2	30.43 30.22	29.83 30.16	74 65	54 62	2	3	4 0	3 6
March	20	7	...	2	2	...	3	30.32 30.17	29.83 30.01	79 69	57 65	2	7	4 0	3 6

The weather during the last three months of 1881 was very disagreeable, the rainfall being much greater than that during the same period of any year since the opening of the port. October was ushered in by a strong north-east blow which lasted for four days. The lowest reading of the barometer was 29.70 inches, and there was no further indication here of the typhoon that was raging at the same time on the east coast of the island, where the s.s. *Quinta* was wrecked. November was likewise a wet month, and differed much from the same month in 1880, when we had not a single wet day. We have had very pleasant weather this year, for the most part fine, cool and bracing. The lowest reading of the thermometer was 54°, which was noted on the 4th February. There have been no freshets of any consequence, and the river has not overflowed its banks to any great extent.

The health of the foreign residents, who now number 16, has during the last six months been very good. Excepting one case of chronic rheumatism of the knee-joint, and one of palmar abscess, both of which turned out very favourably, all other complaints for which I have been consulted were of a trivial character. Among the native population the

mortality has not, I am told, been large. Diseases of the respiratory organs have been more prevalent than usual, but that may be accounted for by the unusually damp weather that occurred during the latter months of 1881. I hear that deaths from malarial fever among the troops despatched hence to quell the disturbances occurring in the south of the island have been very numerous.

A Chinaman from the Tung'hwa Hospital in Hongkong arrived here last November, but after vaccinating about 300 persons, he left for Pakhoi. Since his departure, six petty officials have been sent down here by the Viceroy to perform vaccination among the native population of Hainan.

I think the following case may be considered of sufficient interest to deserve reporting. The notes I give were taken last July, but at the time I wrote my last Report I wished to obtain further information about the case.

16th July 1881.—A middle-aged naval surgeon, of vascular temperament, apparently in good health—whose brother when the same age was suddenly, when on the west coast of Africa, seized with hæmatemesis, of which he died, the cause of the hæmatemesis being uncertain; whose family history, moreover, was good,—was astonished two years ago to find that he failed to pass the medical examination for an assurance company. The cause of failure was unknown, unless it was on account of his having had a mild attack of yellow fever previously, in addition to two attacks of remittent fever. Since having had yellow fever he has been troubled with a weak stomach. For some years he has spent the greater portion of his time at sea. During the few weeks he has been on the China coast he has been taking out-door exercise, which, considering the great heat, has been of too severe a character, and has often brought on nausea and vomiting. His appetite has been fairly good, and he has not lost much flesh. He has suffered from dyspepsia, but drinking hot fluids has not caused pain in the stomach. The bowels have lately been very much constipated, necessitating the administration of a large amount of aperient medicine. His health since he came to China has never been such as to require absence from work. For the last day or two he has not been feeling well. Late this afternoon he passed a small motion requiring a great deal of straining; shortly afterwards he began to feel faint, and on getting up to walk his legs seemed to give way under him. During the evening he had a glass of brandy, after which he vomited over the ship's side, it being too dark at the time to see what it was he vomited. The faintness increasing, I was summoned on board, but before my arrival he had taken a second glass of brandy, which caused him to vomit, and it was seen that he had brought up a large quantity of blood.

17th July.—I found him lying on deck with a large pool of blood at his side. At first he failed to recognise me, and he was for some time in a most critical condition. His pulse at times was almost imperceptible. Every few minutes he fainted; upon returning to consciousness he moaned a great deal and complained of pain in the stomach and head. His head was bathed with iced water, and iced cloths were laid over the epigastrium, but had frequently to be removed on account of the severe burning pain they occasioned. He took strong doses of dilute sulphuric acid, and from time to time drank iced claret and water. At 3 A.M. there was another attack of hæmatemesis, but only a small quantity of blood was this time voided; the fainting after this not returning, there was reason to believe that the hæmorrhage had ceased. In addition to the pain in head and stomach, he complained of a feeling of suffocation; the heart's action was fluttering, and the sounds extremely feeble. At about 7 A.M. he vomited a small quantity of fluid, but no blood. The stomach was said to feel very full, and on placing a stethoscope over it the pulsations of the abdominal aorta could be heard. He had insatiable thirst, though ice, acidulated iced water, and strong cold beef tea were given him at frequent intervals. About noon the bed-pan was used; the motion was small and of a tarry character; only a few drops of urine were passed. During the day the thirst continued; pain was complained of in the calves; the voice was feeble; prostration great, the patient being unable to

raise his arm to drink, or his head from the pillow; towards evening he had another motion like the first; during the night he slept for a short time, but frequently asked for iced drinks.

18th July.—Pulse a little firmer and more regular; complained of palpitation and shortness of breath; sight was dim, and the general surface of the body was blanched, the muscles feeling soft and flabby; conjunctiva of a pearly whiteness. In the morning he was unable to micturate; although he had swallowed large quantities of fluid, he had only passed a few drops of urine; there was still great thirst, but less than on the previous day; tongue brown; pulse feeble; there was great helplessness, the patient requiring to be lifted when he wished to change his position. In the afternoon about a pint of urine was passed. Towards evening palpitation came on, together with headache; pain over the cardiac end of the stomach; flushing of the face, and thirst; temperature, 99°.6. Ice to swallow and iced water to the head relieved these symptoms, and during the night three or four hours' sleep was obtained.

19th July.—He felt better; the thirst, so bad the night before, had lessened; there was pain in the stomach, considerably increased by any pressure, taking a deep breath, or coughing. Beef tea, jelly, etc., were given at frequent intervals; towards night the hectic symptoms returned, the pulse rising to 110 and the temperature to 99°.8.

20th July.—He had passed a good night, and his condition was much improved; during the day he was able to take nourishment, and the hectic symptoms at night were milder.

21st July.—During the day he complained of a tingling sensation at the end of the fingers, and there was fancied loss of sensation in the right arm; there was also weakness of sight. In the evening there was a good deal of flushing of the face, and palpitation; the temperature rose to 100°.8.

22nd July.—There was some improvement in the general symptoms, though the patient was still very helpless; heart's action feeble and pulse weak; the sounds of the heart were normal, though not loud; the bowels were moved during the day; hectic symptoms at night milder.

23rd July.—From this date he continued slowly to improve, though, as might have been expected from the loss of such a large quantity of blood, his strength returned very gradually.

27th July.—He left to-day for the hospital in Hongkong; he still complained of pain over the cardiac end of the stomach. Until his departure, the only food allowed had been of a fluid character, and was always taken quite cold.

After being in hospital some time, he was allowed to take out-door exercise, during which he exposed himself injudiciously to the sun, and an attack of meningitis was produced, which led—after continued delirium for 29 days—to his death; that event occurring about two months after he was taken ill here. The postmortem examination indicated meningitis with cerebral congestion, together with such a diseased condition of the coats of the stomach as might be expected from the symptoms that showed themselves during life. The fact that the faintness, weakness, and feebleness of the heart's action began after the severe straining at stool, leads me to believe that a vessel in the wall of the stomach gave way at that time, while the pain over the cardiac end of the stomach pointed to that place as the seat of the ulceration. Had what was first vomited been seen, treatment might have been adopted sooner; while the brandy, which was naturally taken to combat the increasing failure of the heart's action, would have been omitted. I should judge that at least a couple of pints of blood was vomited, but I am only able to guess at the quantity.

Dr. F. Carrow's Report on the Health of Canton for the Eight Months ended 31st March 1882.

During the period under review, we have to record but few cases of illness. Among the Chinese there has been no epidemic since the winter of 1880–81. The only thing worthy of note is that an unusually severe form of remittent fever prevailed to a limited extent among foreigners. Two cases of recent date have had to be sent to northern ports, after long-continued and large doses of quinine, carbolic acid, etc., had been used without apparent effect. I have been led to notice the more frequent occurrence of these severe forms of continued remittent fevers each succeeding year, especially with fevers which have a typhoid character. The cases have occurred, without a single exception, in people who have resided here for more than 10 years; while those who have but recently come always have it lightly. Patients perfectly strong and vigorous in other respects are attacked without warning, and often without cause which they themselves can see; and when this has been the case, I have always had to order a change of climate, not having succeeded in effecting anything more than a temporary cure by all the known remedies. Then, too, I have noticed that after the first attack is experienced the disease recurs regularly every year in January, February or March. Again, those whose business brings them into the open air seem to be less liable to these climatic changes and diseases than those who lead sedentary in-door lives.

Syphilis prevails to a frightful extent in Canton, and we can only hope for a remedy to this evil when laws which govern inspection of prostitutes in some of our Western cities have force here,—and that is a long time in the future. I have to record one death from typhoid. There were two births.

For the accompanying tables I am indebted to Mr. Assistant Tidesurveyor Iffland.

Abstract of the Customs Meteorological Tables from April 1881 to March 1882.

Month.	Winds.							Weather.			Barometer.				Thermometer.			
											Day.		Night.		Day.		Night.	
	No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Variable.	No. of Days Calm.	Average Hourly Force.	No. of Days Fog.	No. of Days Rain.	Rainfall in Inches.	Highest Reading and Average Highest.	Lowest Reading and Average Lowest.	Highest Reading and Average Highest	Lowest Reading and Average Lowest.	Highest Reading and Average Highest	Lowest Reading and Average Lowest.	Highest Reading and Average Highest	Lowest Reading and Average Lowest.
1881.							*miles*				*Inches.*	*Inches.*	*Inches.*	*Inches.*	°	°	°	°
April	6	21	2	...	1	...	5.6	2	20	11	30.18 29.99	29.76 29.91	30.15 29.96	29.80 29.93	85 76	60 71	80 70	58 69
May	6	11	8	...	6	...	4.3	...	14	7.3	30.20 29.97	29.81 29.91	30.18 29.95	29.81 29.93	91 84	67 78	85 78	65 76
June	1	19	7	...	3	...	4.2	...	13	5.4	29.98 29.88	29.70 29.84	29.94 29.85	29.72 29.82	91 87	71 81	88 82	71 79

Month.	Winds.							Weather.			Barometer.				Thermometer.			
											Day.		Night.		Day.		Night.	
	No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Variable.	No. of Days Calm.	Average Hourly Force.	No. of Days Fog.	No. of Days Rain.	Rainfall in Inches.	Highest Reading and Average Highest.	Lowest Reading and Average Lowest.	Highest Reading and Average Highest	Lowest Reading and Average Lowest.	Highest Reading and Average Highest	Lowest Reading and Average Lowest.	Highest Reading and Average Highest	Lowest Reading and Average Lowest.
1881.							*miles*				*Inches.*	*Inches.*	*Inches.*	*Inches.*	°	°	°	°
July	1	21	4	1	4	...	5	...	15	9.8	29.90 29.81	29.65 29.76	29.91 29.81	29.65 29.72	93 89	79 82	89 83	78 80
August	4	15	8	2	2	...	5.3	...	18	10.4	29.96 29.81	29.50 29.76	29.97 29.79	29.50 29.77	95 89	78 83	91 84	78 81
September	6	12	1	2	9	...	4.7	...	8	2.6	30.07 29.91	29.62 29.87	30.02 29.90	29.63 29.89	96 88	77 82	91 83	75 80
October	17	12	1	1	...	...	6.6	...	3	4.4	30.17 30.03	29.57 29.95	30.11 30.00	29.40 29.95	93 83	67 77	85 74	63 73
November	14	12	...	2	2	...	4.8	...	11	1.3	30.29 30.12	29.93 30.06	30.20 30.09	29.97 30.08	85 77	55 69	79 72	55 68
December	28	1	...	...	2	...	6.9	...	6	1.7	30.37 30.21	29.98 30.14	30.35 30.17	29.98 30.15	83 68	49 61	75 62	49 58
1882.																		
January	20	6	...	...	5	...	4.2	3	7	0.8	30.36 30.22	29.98 30.18	30.44 30.20	30.01 30.17	78 68	45 59	74 61	43 58
February	20	3	...	3	2	...	5.1	2	4	...	30.39 30.20	29.79 30.13	30.36 30.16	29.80 30.14	73 63	47 55	69 59	45 53
March	17	4	...	...	10	...	5.2	...	9	2.5	30.31 30.16	29.86 30.08	30.28 30.13	29.89 30.10	80 69	50 64	75 66	49 58

Remarks:—During April, rain fell on 20 days, measuring 11 inches; in May, on 14 days, measuring 7.3 inches; and in June on 13 days, measuring 5.6 inches. In the previous year, rain fell during the month of April on 14 days, measuring 3.8 inches; in May, on 24 days, measuring 7.6 inches; and in June, on 28 days, measuring 11.9 inches. Rain fell during July on 15 days, measuring 9.8 inches; in August, on 18 days, measuring 10.4 inches; and in September, on 8 days, measuring 2.6 inches. In the previous year, rain fell during July on 10 days, measuring 3 inches; in August, on 19 days, measuring 8.9 inches; and in September, on 12 days, 1.11 inches. Rain fell during October on 3 days, measuring 4.4 inches, against 7 days' rain, measuring 0.3 inches, in the corresponding month of last year. Light drizzly rain fell during November on 13 days, measuring 1.3 inches, while no rain fell in the corresponding month of last year. During December, rain fell on 6 days, measuring 1.7 inches, against 6 days' rain, measuring 1.3 inches, in the corresponding month of last year. Light rain fell during January on 7 days, measuring 0.8 inches, while no rain fell in the corresponding month of last year. Light drizzly rain fell during February on 4 days, measuring almost nothing, against 17 days' light rain, measuring 1.3 inches, in the corresponding month of last year. Light rain fell during March on 9 days, measuring 2.5 inches, against 11 days' rain, measuring 5 inches, in the corresponding month of last year.

The prevailing winds during the months of April, May and June were from E. to S.; no strong winds or gales occurred. The prevailing winds during the months of July, August and September were from E. to S., and the strongest wind, on the 22nd August, from N. to E., averaging 21 miles per hour during the 24 hours. The prevailing winds during October were from N.E. and S.E., and the strongest, from N.E., on the 14th (barometer 29.40), averaging 20 miles per hour during the 24 hours. The prevailing winds during November were from N.E. and S.E., and the strongest, on the 21st, averaging 10.7 miles per hour during the 24 hours, from N.E. The prevailing winds during December were from N.E., and the strongest, on the 14th, averaging 11.3 miles per hour during the 24 hours, from N.E. The prevailing winds during January were from N.E., and the strongest, on the 31st, from N.E., averaging 15.6 miles per hour during the 24 hours. The prevailing winds during February were from N.E., and the strongest, on the 3rd, from N.E., averaging 12.5 miles per hour during the 24 hours. The prevailing winds during March were from N.E., and the strongest, on the 2nd, from N.E., averaging 10.4 miles per hour during the 24 hours.

Dr. J. A. Stewart's Report on the Health of Foochow for the Half-year ended 31st March 1882.

The health of this district has been exceptionally good for the last half-year; indeed, I may extend my remark and say it has been exceptionally good for the last year. Perhaps no healthier year could be recorded in the medical annals of Foochow—not one that I know of, at least.

There has been one death, due to persistent, progressive anæmia, in a patient who had long suffered from derangements of the liver.

The health Report of this district has been now properly brought to its close, but as it is understood that I should append any observations I may have made, or any experience occurring to me, I shall do so.

As it has been remarked in a former Report of this district that the distinguishing type of disease has changed, I can only add to this remark that this year confirms it. It was said before that ileo-colitis had been the distinguishing type, but that it was supplanted by malarial fevers; that these fevers were generally slight and fleeting, though protean in their forms, but sometimes very severe, if rarely deadly. This year we have had no genuine case of ileo-colitis, any more than we have had during the past five or six years, while remittents and intermittents we have had, and without marked abatement of their own particular predominance.

Two cases of remittent fever assumed a very low, or typhoid, type, while one affected the brain in an extreme manner after the force of the disease had apparently spent itself, for the pulse had then gone down from 120 to less than 100; and the temperature, from having been 104°, had descended to 99°. The peculiar affection of the brain manifested was persistent hallucinations. The patient was perfectly rational; knew that he had hallucinations. No mind could be clearer than his at the time, or could reason better. I consider his case quite phenomenal, and could ascribe it only to a special confinement of the disease, or rather some sequelæ of the disease to some portion of the optic nerve. It must have been affected, or in an irritant state, when the rest of the brain was normal.

The hallucinations were accompanied with insomnia, as might be expected. A few doses of hyposulphurous acid procured sleep and allayed the hallucinations. Speaking of hyposulphurous acid, I have found it of very great benefit in all fevers when manifesting an approach to lowness of form, whether these fevers were malarial proper or true typhoid; indeed, I rely upon it more than on any other remedy—that is, when given early. A strong objection to it is its sharp pungent smell. I generally administer it till the system seems thoroughly pervaded with it, which is manifested by the patient being unable any longer to bear it, and this he soon proves after being borne over the line where convalescence begins; indeed, I am in the habit of regarding intolerance of it as a good symptom.

Our most delicate patients, children of two years of age and under, have stood forward prominently during the past half-year in health, and what holds good of them during the past half-year maintains its place for the half preceding. I do not know, however, anything which strikes me more forcibly than the health of very young children now, as compared with 10 years ago and earlier. Then, no summer could be got over without these young charges, or, to speak more strictly, a certain quota of them, becoming the subjects of severe dysenteries, varied by infantile cholera, which required but a very few hours to destroy its victim. This was so well recognised and marked a feature that neither Dr. BEAUMONT nor myself ever entered a summer without a certain definite apprehension, and from some sad experience and undeniable conclusions arrived at, we both refused to become responsible for any infant fed by spoon or bottle instead of by nurse. Now dysenteries occur, but of a comparatively slight character, while the deadly infantile cholera is non-existent. Mothers, too, have rebelled against the good sound old dogma of never attempting to bring up a child by hand or bottle, and thus far with entire impunity. It seems to me as if I had almost dropped into a new world. I have no doubt that there is a wave in disease, and that we in Foochow are just now on the top of the wave. No one can prophecy, though, when or how soon we shall be in the hollow. That we shall be some time, and that all the old types and virulencies of disease in some degree will reappear, I do not question; meanwhile, it is pleasant to be as we are. Albeit, I think he is wisest who will not sleep on his guard against the foe.

I am quite of the opinion that the greater attention now paid by adults to diet, whether in its solid or liquid form, has helped to ward off disease from them, or to ameliorate it when it comes. The comparatively pure milk at present at command, not forgetting the much better prepared infants' food and tinned milk than used formerly to be had, has done a great deal for the children. People who know Foochow as it was once can well coincide with me here. With an excellent recreation ground, increasingly being made use of, and particularly by the ladies and children, who are in most want of such a thing, we ought all to be better off on the score of health in the future.

I will conclude this paper with a few notes on the actions in my hands of a few drugs, because I understand everything of the sort is invited.

For syphilitic sores I have found iodoform extremely useful; the same may be said when herpes præputialis is the complaint. Where I have, though, found iodoform most useful is in a bleeding cracked condition of the meatus ani. I had two cases of fissure of the anus where it did away with the necessity of the scalpel.

Citrate of caffein I have found useless given in 2-grain doses for megrim. In 4-grain doses—that is to say, in one 4-grain dose followed in an hour or two by a second 4-grain dose, if necessary—I have found it of decided benefit. I have taken it myself in 5-grain doses with no worse feeling than a slight sense of fulness at the stomach and buzzing in the ear. The 2-grain dose is, in my idea, just as useless as the 2-grain dose of oxalate of cerium, which I have never found more advantageous than two drops of water. Ask an Indian doctor, too, who gives his oxalate of cerium in 10 or 15 grain doses, what the good of 2-grain ones is.

Tonga, by itself, I have no high opinion of; given along with citrate of caffein, say within half an hour to an hour after a 4-grain dose of the citrate, when the citrate did not appear to be taking the full effect, I have found it advantageous,—more so, perhaps, than a second 4-grain dose of the citrate would be.

I have seen chrysophanic acid act most beneficially in all forms of skin diseases due to cryptogams; indeed, I have been taught to look upon it as a specific in these diseases, and one even more reliable in them than quinine is in malarial poisoning. I used to employ it, at first, in 10 and 20 per cent. strengths; but I often use it now undiluted or unmixed, and that to the raw sore; applied to a raw on the skin, I have found it act energetically as a healer and diminisher of smarting pain. I have known it cure quickly both ringworm pure and ringworm aggravated to a very high degree by eczema, when sulphuret of calcium and other remedies had failed; indeed, seeing what a malodorous compound the sulphuret of calcium is, I do not see why it should ever be used while chrysophanic acid is to be had.

There is one disease on account of which one ought, if possible, to be almost grateful to chrysophanic acid, and that is that cryptogamic form of disease which, attacking the palm in a very innocent-looking manner at the beginning, goes on to work and burrow and spread till the whole surface of the palm is changed, and little of it left except cracks connected by thin films of skin; the denudation is worst when it is associated with eczema, and the patient can not only not allow his hand to be seen, but must also keep nearly always rubbing what is already too tender to be touched: living in chronic misery. Chrysophanic acid does not, without being given a due amount of time, cure this most persistent disease. It requires from two months to half a year at least for that; but is not that a great advance upon what otherwise seems hopeless?

I have noticed the long-continued use of chrysophanic acid give rise to conjunctivitis; I see this consequence is being noticed at present in England. The conjunctivitis is not severe, and readily passes off, so far as my experience has gone, upon giving up the acid for a short period.

Dr. G. R. Underwood's Report on the Health of Kiukiang for the Year ended 31st March 1882.

The health of the foreign community at this port during the past 12 months may be said to have been good. There has been no epidemic of any kind in the concession, nor have the more common diseases of this climate been unusually prevalent. Beyond a few cases of bronchial catarrh, diarrhœa, and other ailments of less importance, there was little sickness in April and May. In June there were two cases of intermittent fever, which were slight, and readily yielded to treatment. One of the patients has had a recurrence of the disease three times since then. On the 26th July there was one death from the high atmospheric temperature and exposure to the sun, and on 2nd August another.

The first was that of an elderly man who had lived 18 years in China, and whose constitution was enfeebled. In May last, shortly after his coming to Kiukiang, he had a severe attack of diarrhœa, followed by a second in June, and, reduced in strength by these, when the hot weather came, cerebral symptoms were developed, from which he never rallied.

The second case was that of a man about 32, well-developed and healthy in appearance, but of irregular habits. While out of doors on the morning of 29th July, working at his trade, he suddenly became ill, and went home. He complained, on my seeing him immediately after, of severe frontal headache, pain in the cardiac region, and difficulty in breathing; and the heart's action was increased, the pulse 96, and the temperature 101°. Dry cold and other remedies were used, and he felt considerably better towards evening. The improvement continued next day, his pulse and temperature having come down, and the headache and dyspnœa had gone. He was strongly urged to remain in the house that day, and to be very cautious about exposing himself to the sun for several days. The following morning he was out when I called, and on 1st August at 4 P.M. I saw him out at work. The same day at 8.30 P.M. I was called to see him, and found him sitting in the street, shouting and singing, and was told that he had been drinking to excess in the afternoon. He was taken to his lodgings, and being uncertain, from the excited action of the heart and high temperature, how far the symptoms might be due to alcohol and to a return of the cerebral mischief, as he became more quiet, I washed out the stomach, and applied cold to the head. He seemed then disposed to sleep, and I left him for an hour. On my return he was comatose, his pulse rapid and weak, the temperature 104°, and his breathing stertorous. Sinapisms, solution of ammonia and a powerful interrupted current battery were used, but all attempts to rouse to consciousness failed, and he died at 2 A.M., 2nd August.

There was no postmortem examination.

There was also in August a case of cerebral congestion, induced by the heat, in a child of 18 months. Though at one time in a critical condition, he made a good recovery. There were three cases of dysentery in September, all of which were readily amenable to dietetic and other treatment; and one case of severe remittent, from Ngankin, which also did well. From that time to December there was no illness of consequence, but in the last-

named month there was a case of typhoid fever. The disease, which was very well marked, ran its course without a single unfavourable symptom, and the patient quickly got well. There have been three births in the concession during the 12 months.

Missionaries and others who had occasion to go into the country round Kiukiang reported that there was very much sickness amongst the Chinese during the summer and autumn. One has little to guide in the formation of a correct opinion, but, judging from the character of cases seen at the hospital and from perusal of former Reports, I am inclined to doubt whether there was more than usual. In places away from towns, those suffering from illness are very often left lying outside in the daytime, while the weather is warm. Their appearance thus attracts the attention of the passer-by, who is impressed with the number he sees, and is apt to over-estimate it. In June there were reports amongst the Chinese of a very fatal epidemic at a village some 30 *li* east of Kiukiang. It seems to have been a severe form of remittent.

Three thousand one hundred and fifty-six Chinese applied at the hospital for medical assistance during the past year. Of these, 575 were cases of diseases of the eye and lids, 105 being sufferers from corneal ulcer in its various forms. Many of the worst forms of corneal ulcer began while the patient had or had just recovered from malarious fever; indeed, the debility induced by intermittent and remittent seems to be the starting-point of a large per-centage of the cases seen here. Chronic conjunctivitis, with the resulting granular lids and pannus, is also very frequent amongst the eye cases. Many operations, including those for artificial pupil, iridectomy, cataract, pterygium, trichiasis, etc., were done with a fair amount of success. Of intermittent and remittent fevers, 287 cases came under observation; and of their direct results, anæmia, with enlargement of the spleen—and at times of the liver,—125. Of these last, 45 were also suffering from ascites. Of those who had anæmia alone, there were 57. Many of the cases with ascites were tapped several times, with the exhibition of iron in large doses, and, though the results were not so good as could be wished, the treatment proved the best I have hitherto tried. Of eight cases of cancrum oris only two did well, and these were treated by the free use of chloride of zinc, and stimulants with quinine. Of five cases of phlegmonous erysipelas of the lips, as seen at the hospital, all died. At Kiutechin, in December, a much-respected member of the French Mission here died from this disease.

Amongst diseases of the nervous system were two cases of laterospinal sclerosis, one of writer's cramp, and three of locomotor ataxy. The subject of writer's cramp was a student, who found his promotion stopped and his prospects ruined by the disease. Under the use of the interrupted current he improved considerably, but went away far from being cured. One of the ataxic patients is certainly much better since he came. The improvement is as much owing to his better circumstances as to medical treatment.

I have seen six cases of opium-poisoning during the year, and in all except one the patient was moribund when I was called. In every case assistance was asked at least four hours after the poison had been taken. Elephantiasis, common at the coast ports, is seldom seen here, only two cases having presented themselves this year, and these for some more pressing ailment.

Operations were performed for fistula in ano ten times, removal of tumours four times, hare lip five times, amputation middle third of leg once, perineal section for relief after ruptured urethra, causing retention, once, and many other minor operations.

There have been three deaths in the hospital,—one from phthisis, another from gangrene of the leg after intermittent fever, and a third from blood-poisoning connected with diseased hip-joint.

For the following abstract of meteorological record, I am indebted to Mr. LAND, the Harbour Master:—

YEAR AND MONTH.	THERMOMETER.			RAIN.	
	Highest.	Lowest.	Average.	Rainfall in Inches.	No. of Days.
1881.	°	°	°		
April	87	48	65.5	$7\frac{10}{20}$	14
May	85	59	69.6	$10\frac{12}{20}$	13
June	92	64	76	$14\frac{11}{20}$	13
July	92	70	84.5	10	10
August	93	71	84.5	$4\frac{12}{20}$	8
September	93	65	75	$3\frac{10}{20}$	8
October	83	51	66.7	$5\frac{6}{20}$	8
November	71	41	56	3	8
December	57	30	43	$3\frac{5}{20}$	9
1882.					
January	75	30	44.5	$5\frac{3}{20}$	8
February	54	32	43.5	$4\frac{16}{20}$	9
March	76	35	51.9	3	7

Rainfall for year, $70\frac{6}{20}$ inches.

Dr. Alexander Jamieson's Report on the Health of Shanghai for the Half-year ended 31st March 1882.

Abstract of Meteorological Observations taken at the Observatory of the Jesuit Mission at Sicawei, for the Six Months ended 31st March 1882. Latitude, 31° 14′ 32″ N. Longitude E. of Greenwich, 121° 29′ 8″.

DATE.	Barometer at 32° F.	Thermometer. Diurnal Mean Temperature in Shade.	Thermometer. Extreme Temperature in Shade.	Elastic Force of Vapour estimated in Inches of Mercury.	Humidity, 0–100.	Ozone, 0–21.	Velocity of Wind per Hour.	Mean Direction of Wind.	Total Evaporation during Month.	Total Rainfall during Month.	REMARKS.
1881.	*Inch.*	° *F.*	° *F.*	*Inch.*			*Miles.*		*Inch.*	*Inch.*	
Oct. Max...	30.318 (18)	70.4	78.3 (3)	0.780	93 (13)	21	18.3 (29)	N. 50° E.	2.308	5.529	Seven days rain, between the 8th and 17th. Maximum velocity of wind in 24 hours, 268.9 miles, on the 8th; minimum, 50.2 miles, on the 11th.
Mean	30.086	64.8	...	0.489	78	10	6.6				
Min....	29.859 (12)	60.1	42.4 (30)	0.209	61 (18)	2	0.6 (26)				
Range	0.460	10.3	35.9	0.571	32	19	...				
Nov. Max...	30.482 (25)	59.6	72.0 (9)	0.610	91 (28)	17	32.7 (24)	N. 23° W.	1.792	1.843	Twelve days rain. Magnetic storm on the 10th. A fine aerolite was visible in the northern sky at 2.30 P.M. on the 22nd. Hoar frost observed for the first time on the morning of the 23rd. Maximum velocity of wind in 24 hours, 324.3 miles, on the 20th; minimum, 65.1 miles, on the 27th.
Mean	30.185	54.1	...	0.345	79	11	6.6				
Min....	29.947 (19)	50.0	30.4 (26)	0.106	66 (24)	0	0.6 (26)				
Range	0.535	9.6	41.6	0.504	25	17	...				
Dec. Max...	30.634 (19)	47.7	68.0 (11)	0.524	92 (1)	21	21.5 (17)	N. 5° W.	1.886	1.091	Eleven days rain. Maximum velocity of wind in 24 hours, 364.5 miles, on the 17th; minimum, 72.8 miles, on the 19th.
Mean	30.372	43.3	...	0.232	78	12	8.0				
Min....	30.031 (1)	40.2	24.1 (31)	0.075	66 (31)	6	0.6 (21)				
Range	0.603	7.5	43.9	0.449	26	15	...				
1882.											
Jan. Max...	30.587 (14)	47.2	67.5 (23)	0.445	95 (29)	21	25.2 (7)	N. 1° E.	1.689	4.246	Ten days rain. Heavy rain on the 7th and 31st. First fall of snow on the 7th. Maximum velocity of wind in 24 hours, 332.3 miles, on the 10th; minimum, 85 miles, on the 13th.
Mean	30.322	41.4	...	0.221	82	13	8.2				
Min....	29.924 (23)	37.1	23.9 (11)	0.047	57 (10)	6	0.6 (2)				
Range	0.663	10.1	43.6	0.398	38	15	...				
Feb. Max...	30.557 (5)	45.1	52.7 (8)	0.358	92 (29)	21	28.2 (21)	N. 8° E.	1.875	1.863	Seven days rain. Violent storm with heavy rain on the 15th. Maximum velocity of wind in 24 hours, 428.2 miles, on the 15th; minimum, 80.4 miles, on the 18th.
Mean	30.334	40.6	...	0.198	77	14	10.2				
Min....	29.831 (15)	37.1	28.4 (22)	0.083	59 (21)	8	0.7 (7)				
Range	0.726	8.0	24.3	0.275	33	13	...				
March... Max...	30.533 (13)	54.9	77.9 (18)	0.524	93 (30)	21	25.6 (26)	N. 49° E.	3.604	0.595	Seven days rain. Maximum velocity of wind in 24 hours, 376.6 miles, on the 29th; minimum, 87.4 miles, on the 9th.
Mean	30.213	47.3	...	0.232	70	13	8.1				
Min....	29.734 (18)	40.9	30.2 (6)	0.071	49 (27)	5	0.6 (7)				
Range	0.799	14.0	47.7	0.453	44	16	...				

Note.—The figures in parentheses indicate the days on which the observations to which they are appended were made. Note that under the heading "Humidity" the maxima and minima registered are the diurnal mean maxima and minima; in other words, they correspond to the two days of the month whereon the humidity was respectively greatest and least during the 24 hours. These additions to the usual abstract, and modifications of it, render it more complete, and therefore more valuable.

I have again to thank the Rev. Father Dechevrens, S.J., for his kindness in condensing many pages of observations into a form suitable for these Reports.

The following table is drawn up from the English and French municipal burial registers and from the books of the municipal sexton, which were obligingly placed at my disposal:—

BURIAL RETURN of FOREIGNERS for the Half-year ended 31st March 1882.*

CAUSE OF DEATH.	OCTOBER.	NOVEMBER.	DECEMBER.	JANUARY.	FEBRUARY.	MARCH.	TOTAL.
Typhoid fever	1	2†	...	...	...	...	3
Remittent fever	...	*f* 1†	...	...	...	...	1
Pernicious fever	...	*f* 1	...	1‡	...	...	2
Cholera	5†	...	...	...	...	...	5
Scurvy	...	...	...	...	...	1†	1
Chronic alcoholism	1	...	...	...	...	...	1
Phthisis	1 *f* 1 *f* 1†	...	1 *f* 1	...	...	1†	6
Bright's disease	*f* 1	...	...	...	...	...	1
Apoplexy	*f* 1	...	...	1	...	1	3
Abscess of brain	...	...	...	1†	...	...	1
Spinal meningitis	...	*f* 1	...	...	...	...	1
Pleurisy	...	...	1†	...	...	...	1
Pneumonia	...	...	1	...	1	*f* 1	3
Gangrene of lung	1	...	...	...	...	...	1
Rupture of heart	...	...	...	...	...	1	1
Aortic insufficiency	...	1	...	...	...	...	1
Dysentery	1 1† *f* 1§	...	...	...	...	...	3
Diarrhœa	...	2†	1	...	...	...	3
Cancer of bowel	1	...	...	*f* 1	...	...	2
Intestinal obstruction	1†	...	1†	...	...	...	2
Cirrhosis of liver	1	...	...	...	...	...	1
Abscess of liver	...	...	1	...	...	...	1
Chronic nephritis	...	...	...	1	...	...	1
Albuminuria	...	...	...	...	1	...	1
Uræmia	...	...	...	...	...	1†	1
Suicide	1	...	...	...	...	...	1
Drowned	...	...	...	...	...	1†	1
Uncertified	*f* 1‡	...	...	...	1	...	2
TOTAL	21	8	7	5	3	7	51

* Not including deaths among the Catholic religious bodies. † Not resident. ‡ 4 years old. § 8 months old.

Subtracting 1 case of suicide and 1 case of drowning, 49 deaths are attributable to disease. Of these, 3 occurred among children under 5 years old, and of the remainder, 19 (17 males and 2 females) occurred among non-residents. The mortality among adult foreign residents was thus 27 (19 males and 8 females), the number for the corresponding period of 1880–81 having also been 27, but differently distributed between the sexes (23 males and 4 females).

The table may be still further analysed thus:—

CAUSES of DEATH from DISEASE among RESIDENT EUROPEAN ADULTS.

Pernicious fever . . 1 female.
Chronic alcoholism . 1 male.
Phthisis . . . . 2 males, 1 female.
Apoplexy . . . . 2 „ 1 „
Spinal meningitis . 1 female.
Pneumonia . . . . 1 male, 1 female.
Gangrene of lung . 1 „
Rupture of heart . . 1 „
Aortic insufficiency . 1 „

Dysentery . . . . 1 male.
Diarrhœa . . . . . 1 „
Cancer of bowel . . 1 „ 1 female.
Cirrhosis of liver . . 1 „
Abscess of liver . . . 1 „
Chronic nephritis . . 1 „
Albuminuria . . . 1 „
Bright's disease . . . 1 female.

16 males and 7 females.

CAUSES of DEATH from DISEASE among NON-RESIDENT EUROPEAN ADULTS.

Typhoid fever	2 males.	Pleurisy	1 male.
Remittent fever	1 female.	Dysentery	1 „
Cholera	5 males.	Diarrhœa	2 males.
Scurvy	1 male.	Intestinal obstruction	2 „
Phthisis	1 „	Uræmia	1 male.
Abscess of brain	1 „		

17 males and 1 female.

CAUSES of DEATH from DISEASE among the CHILDREN of EUROPEANS.

Dysentery . . . . . 1 female.

CAUSES of DEATH from DISEASE among NON-EUROPEAN ADULT FOREIGNERS.

Phthisis	1 female (Macao).	Pneumonia	1 male (Manila).
„	1 „ „ (not resident).	Uncertified	1 „ „
Typhoid fever	1 male (Manila).		

3 males and 2 females.

CAUSES of DEATH from DISEASE among the CHILDREN of NON-EUROPEAN FOREIGNERS.

Pernicious fever . . . . . 1 male (Manila).
Uncertified . . . . . 1 female „

1 male and 1 female.

It will be observed that all the cases certified as cholera occurred among non-residents, —all, in fact, occurred among sailors. Year by year the same rule is observed, that it is only those who expose themselves without precaution to sudden changes of temperature, or to miasma arising from the ground within and around houses in the worst parts of the native quarters, or who have committed more or less obvious imprudences in eating and drinking, especially in drinking, or who are the subjects of chronic alcoholism, that present the group of often fatal symptoms, which it would be convenient to call cholera were it not that most people associate with this term the idea of epidemicity, and therefore of inevitableness.

One case of pneumonia in a lady, where both lungs were affected, and which proved fatal in March, was secondary to scarlatina. The rarity of this fever in Shanghai makes its occurrence worthy of special notice. Dr. PICHON and I were satisfied as to the nature of the affection, and sufficient proof was afforded by the fact that six children in the house took the disease in turn, all presenting in varying degrees the classical symptoms.

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